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MACWORLD

August/September 1986
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The Macintosh™ Magazine

MacGraphics

CAD/CAM
Comes of Age



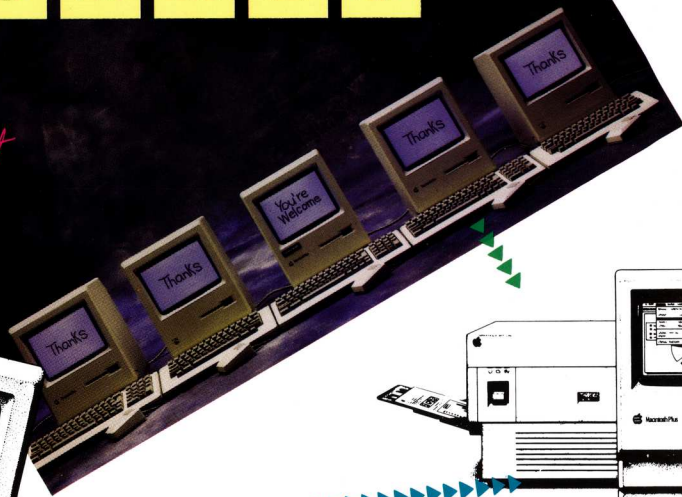
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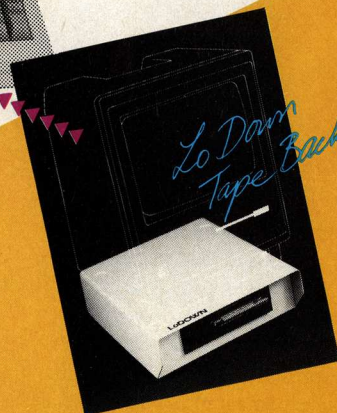


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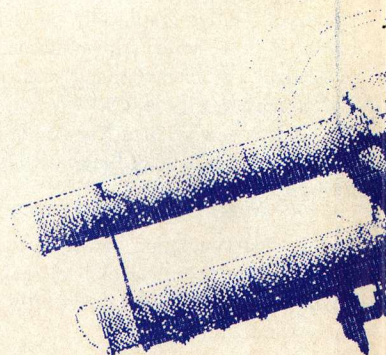
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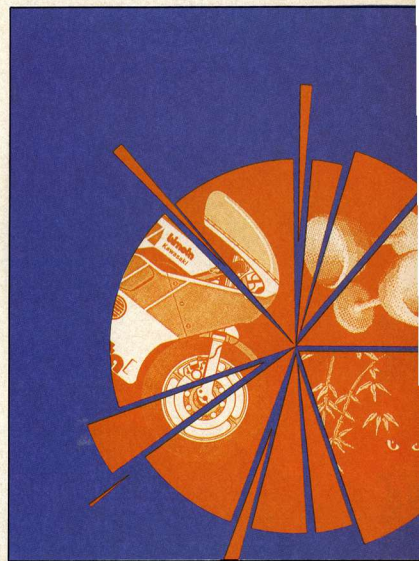
By Philip Jeeves

In a small township in southern Tasmania, a revolution has taken place. For the first time a Mac is being used to produce a classified newspaper from start to finish.

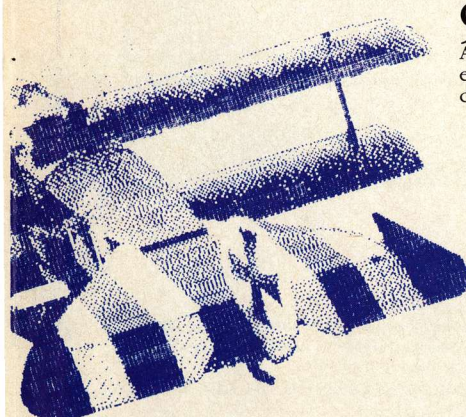
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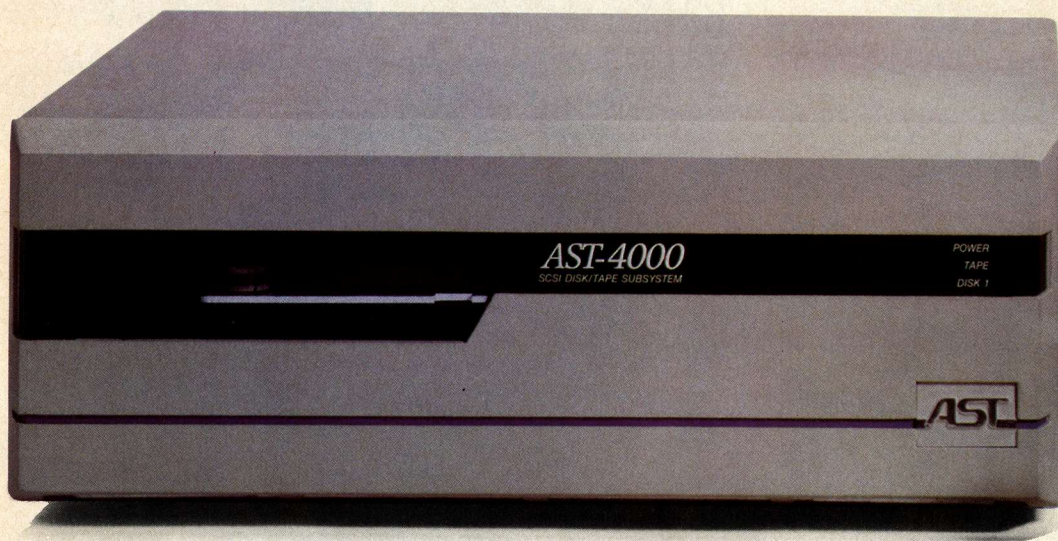
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THE MAC THAT ROARED

When I first saw the Macintosh I had to sign a non-disclosure agreement to do so. It was a good thing I did, because immediately I wanted to tell people what I had seen.

This was in November of 1983. I was working then as publications director for Continental Software in Los Angeles. At that time Continental had two successes going for it: *The Home Accountant*, household financial management software; and a product review guide I edited annually called *The Book of Apple Software*. I was part of Continental's development team, responsible for creating user's guides to accompany Continental's software products. It was in that role that I first met the Mac.

Continental's *Home Accountant* was for over two years a best-seller on the Apple II and IBM PC. Consequently, hardware manufacturers came to us to translate the program on to their new machines and their upgrade to existing models, to enhance the sales potential of these "new" computers. If you want to sell hardware, you need good software that runs on it — available when it hits the market. Continental's development team has seen every major (and minor) box to come along, especially the MS-Dos based clones, a seemingly endless array of soulless Me-Too variations, and we were pretty hard to impress. In fact, we had begun to charge out some of our development time to the hardware companies, to separate the serious players from the windy hopefuls.

So when Guy Kawasaki from Apple Computer called to say he wanted to talk to us about putting *The Home Accountant* on Apple's new computer, codenamed "Macintosh," we expressed only a polite interest. Guy's business card read "Software Evangelist," and when he arrived to explain to us the capabilities of Apple's wonderful new machine, his excitement was contagious. Guy's insistence on conforming to the new user interface was a bit mysterious, but we smiled and signed.

We were not sure what to expect. We had been enthused before by manufacturers, only to be disappointed by the actual box when it was finally delivered, so we reserved our judgement. A "Macintosh" from Apple. Cute concept, we thought: but let us see what it will do.

And saw we did. The Macintosh arrived, with early versions of MacWrite and MacPaint, programming tools, and great tomes of notes and technical documentation. The Mac looked great, really different, a small, sleek, portable package that did not take up two-thirds of the average office desk.

For the programmers the Mac meant hard work, learning a new programming language, the intricacies of the new operation system, the new Apple design philosophy. To create the smooth user interface we now take for granted took a great deal of effort. It is like looking at the athletes performing in the Olympics, pulling off an impossible dive or a gravity-

defying move on the uneven parallel bars. It looks so effortless, and that tells you that those athletes have devoted thousands of hours of their lives to making it look simple, precise and easy.

So it is with programming on the Mac. Programmers had to put in the sweat on their end to make it easy for the Macintosh's users. And because it takes thousands of hours to make the software look effortless, delivery dates kept being pushed further and further back. That is why there were only a handful of programs available for a long time after the Macintosh was first released.

The Continental Software development team had the opportunity to buy a Macintosh the month before it was officially released. And every one of us bought one. This was unprecedented. In fact, we had to pester Apple to increase our allotment. We had often had such opportunities offered before by hardware manufacturers, but passed them up in almost every instance. The Mac was different, it was intoxicating, it was . . . well, sexy. The more we worked with the Macintosh, the more enamoured we became.

That was over two years ago, and I am still excited about the Mac.

Apple's famous "1984" TV commercial broadcast in January of 1984 signalled Apple's intentions: to cause a revolution, to change the way we conceive of personal computing. Apple was right. The idea of the Macintosh — computer as friendly personal appliance — was revolutionary.

The original Macintosh, though a brilliant engineering and ergonomic breakthrough, was simply the starting point, and its development will be a continuous process of refinement at least through the remainder of this decade.

The Macintosh represents the design idea which the rest of the personal computer industry is trying to catch.

Mind you, we need to keep this in perspective: IBM generates Apple's annual revenues in two months, and Apple's entire after-tax profit in ten days. Measured in dollars earned, IBM and all who sail in her represent the enormous majority of the personal computing market share. In terms of

scale, we are talking about the Mac that roared.

Given all the talent, time and money being devoted to research and development in this industry, that Apple has become the second standard of personal computing is an inspiring achievement. Developers may choose to work with the MS-DOS standard, where the bigger dollars are perceived to be in producing hardware and software, but these days they are trying to reproduce the Macintosh user interface — a mouse-driven, icon-based, graphics-oriented, multi-windowed, fast and flexible portable computer which speaks to you in your native tongue rather than in cryptic code. For the most part, the other guys have not achieved what Apple did over two years ago. Further, Apple's new product designs are likely to be what IBMers will emulate tomorrow.

The Macintosh, in breaking with personal computing as then conceived and practised, was very different from the rest of the computers on the market, including Apple's own products. Apple II users were stranded as much as IBM PC or Commodore 64 users. Apple had to take its revolutionary step forward, but doing so also presented Apple with a fundamental problem: isolating its existing user base.

Hardly any other computer company has been so conscientious in bringing its parishioners along with each new move. As editor-in-chief of *The Book of Apple Software* for several years I had been impressed with the care Apple had taken in ensuring that its existing users were able to upgrade or otherwise take advantage of new developments. This had always been a matter of policy with Apple.

But the Macintosh made this

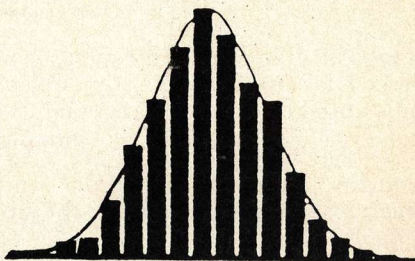
impossible, it was too great a leap into the future. The Macintosh meant more than a change in technological direction for Apple. Where before Apple had grown in an organic way, now divisions appeared. And with divisions, internecine strife.

The Mac had to fight to keep its head above water in a rising tide of Big Blue. But it has established itself. It is the second standard of personal computing. And, however much we groan about the "lack of standardisation," alternative standards are necessary, lest technology become frozen at some arbitrary stage in its evolution. Apple went its own way, not out of some arrogant wish to challenge IBM for PC supremacy, but in order to achieve its own vision of what personal computing ought to be. And its vision has been vindicated. The proof is that the rest of the market is now keying on Apple's present and future developments. MAC

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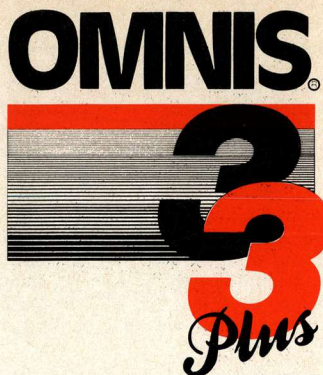
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A shining example

With each issue of *Australian Macworld*, we strive to demonstrate just what the Macintosh is capable of. *Australian Macworld* always has, of course, a high content of Macintosh graphics (including digitised graphics, such as the Flight Simulator review in this issue) and 98 per cent of the articles are written using MacWrite or Microsoft Word.

Advertising is also kept track of by using the Macintosh and Omnis 3 Plus and as a result we have access to up-to-the-minute information through a few mouse clicks.

But despite the high degree of Macintosh involvement, *Australian Macworld* remains a conventional publication as far as production is concerned, that is, we have our stories typeset on a Compugraphics typesetter and pasted up by the resident artist.

This is not the case with *Australian Publish!*, which readers should find inserted in this issue.

Publish! was produced using a combination of desktop publishing technology and traditional methods and the result is an excellent example of just what this technology is capable of.

Publish! is also being inserted in two of *Australian Macworld's* sister publications, but as the publication was produced using a Mac, PageMaker (version 1.2) and a

PostScript-compatible laser printer, it is of more significance to *Macworld* readers.

During the planning stages, the original decision to produce *Publish!* using desktop publishing equipment was reversed. At the time it was felt by those concerned that the technology was still not sufficiently advanced to design, typeset, paginate and print a commercially viable publication to the same high standards as *Australian Macworld*.

However, as I said earlier, *Publish!* was produced using a combination of traditional and desktop publishing techniques. Each page was designed and paginated using PageMaker and space was left for photographs or artwork. The pages were then printed on a laser printer and the illustrations then pasted on.

The reason why we chose this approach is that without spending a substantial amount of time on refinements, it is not really practicable to print digitised photographs.

As well as this, bit map graphics also present some problems in that subtle patterns which can be used to create illusions of shading, special lighting effects and so on become somewhat less effective when



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Australian Macworld June/July 1986

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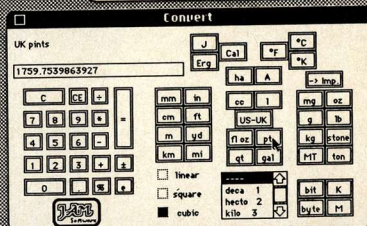
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But, to be fair, the technology behind desktop publishing is still in its infancy, and, unlike traditional methods, has not been through a several hundred year cycle of refinements, improvements and modernisations.

And although the print quality is the best available from such a

As a result of all this attention that desktop publishing (read Macintosh) is getting, there is a lot of activity in the IBM PC arena at the moment. In *Publish!* for example, there is a review of Personal Publisher, the first Mac-style publishing system for the IBM PC offering WYSIWYG display potential.

Indeed, the front cover shows a picture of this program running on

Hercules graphics card for a near-WYSIWYG display, and a lot of patience).

The Mac is the only machine that is well suited to the task, and is likely to remain that way for some time, especially if Apple actively pursues the market it has been doing so to date. (40 per cent of Apple Computer Inc's marketing dollars will be devoted to marketing the Macintosh and LaserWriter as desktop publishing equipment, according to recent US reports.)

Desktop publishing is also an exciting market to be involved in. As new software becomes available, new laser printers are released (including a model capable of color), and the hardware gets smarter and smarter, the art of publishing will change radically.

It is difficult to believe that the printing industry will be able to resist as the technology grows more powerful. After all, most publishing houses use minicomputer networks and many of these systems (some quite modern) are inferior to the Macintosh when teamed with a PostScript-compatible typesetting system.

When the new Mac is released and its capabilities exploited, the desktop publishing market will really have something to get its teeth into.

And there will be Macintoshes everywhere. □

“Desktop publishing is probably the biggest vertical market yet discovered (or invented perhaps) because it involves so many industries and professions.”

personal printing device ever, laser printers do not yet produce output at a resolution that rivals typesetting machines.

But this will change. Desktop publishing is probably the biggest vertical market yet discovered (or invented perhaps) because it involves so many industries and professions.

Graphic artists, typesetters, assembly artists, writers, sub-editors, editors, film makers, business people, advertising companies, marketing companies — the list goes on and on.

an Epson PC with a digitised photograph of Mac on the screen (so much for the WYSIWYG).

At the moment, there can be no doubt that you just cannot use PCs for desktop publishing, and this will still apply when Aldus releases PageMaker for the PC (which will probably assume the user has an AT with 1M-byte of RAM, Microsoft's Windows, a RAM and hard disk, a

...One of these gets you more of these services

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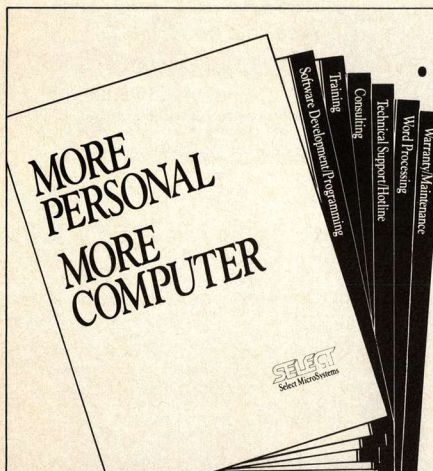
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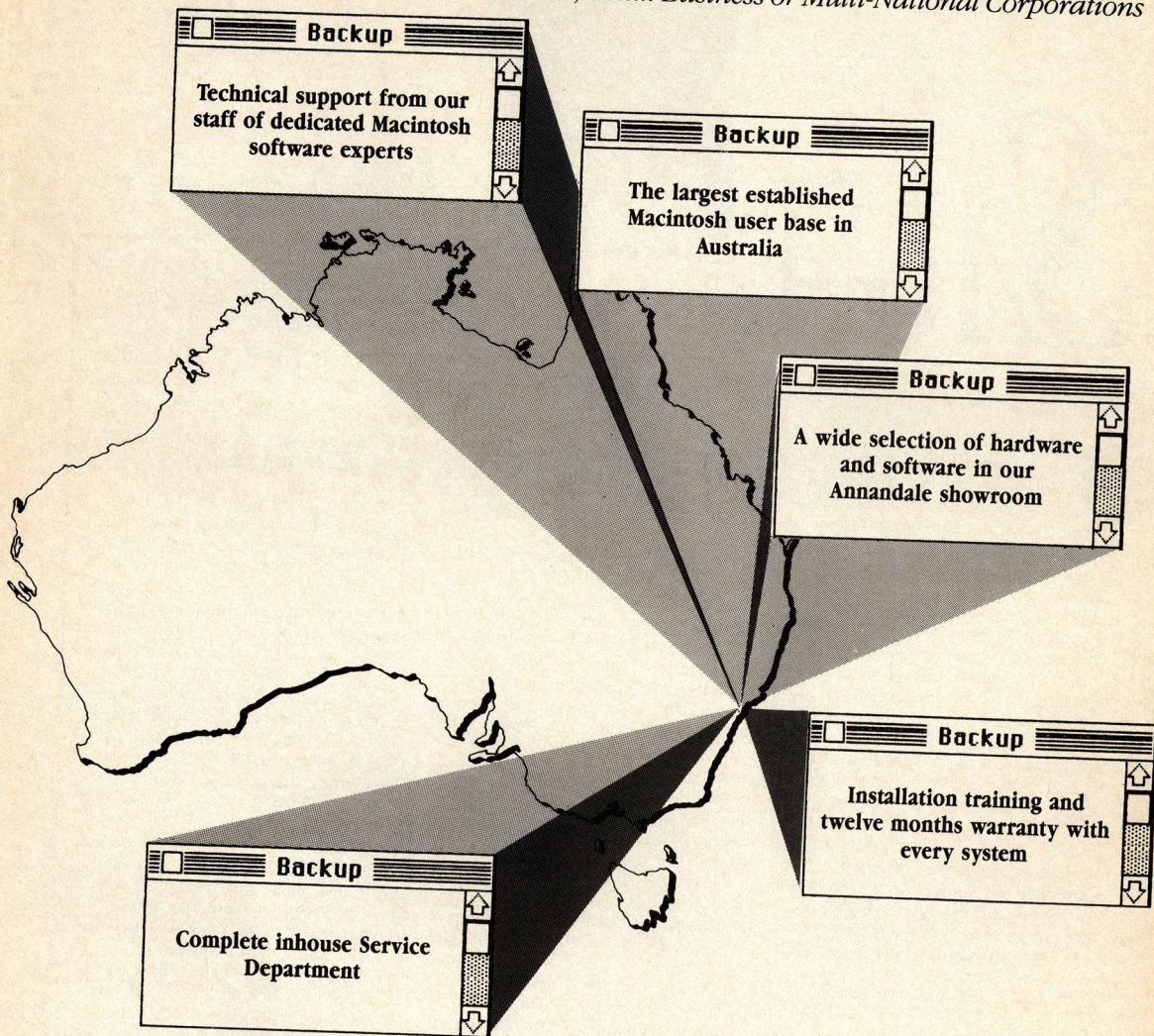
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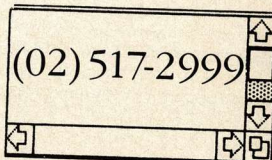
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The System Software SAGA Continues

Craig Winkler

Just when you thought it was safe to go back to working on your Macintosh instead of trying to update all your systems, Apple has struck again. Late in June a new version of nearly all of the Mac system software was released by Apple Australia, with an austere little document included on the disk which gives virtually no information about why we all have to madly scurry about updating our disks.

Dedicated Mac users, have, of course, been through this procedure hundreds of times in the past thirty months. There have only been a couple of official Apple releases, but no doubt many of us have plunged ahead with "back door" software updates which have come via a variety of US sources. Some updates have caused great excitement and even hope, with glimmers of joy appearing in the die-hard owner's eyes as he watched windows zooming in and out with Finder 1.1g.

More recently, Finder 4.1 was a delightful sight, with Shut Downs, MiniFinders, a new batch of undocumented short cuts, an increase in speed and a decrease in bugs.

The next step was a serious one. Could the Mac really answer criticism about its filing system from certain quarters who were used to having to dig through multiple file pathways to find their work? Could Macintosh really make the desktop metaphor more complex? Was it

really possible to pack more bugs into the Finder? The answer? Finder 5.0, shipped with crossed fingers for the newly-released Apple Hard Disk 20.

Amid the cries of "At last — a hierarchical filing system!" a huge educational campaign was mounted in journals such as this one. After all, who can pronounce "hierarchical," let alone understand it? Even Regis McKenna (Apple's advertising agents) were not too sure about that second "c". All was not lost, however.

Most of us now have some understanding of how folders are nested within folders, despite the fact that some programs still require everything tossed lazily about on the desktop.

Of course all has not been doom and gloom. A hierarchical filing system really is a huge improvement for serious Macintosh use, especially with the advent of even larger hard disks. The old "flat" finder would have required a huge amount of space in Ram to maintain desktop details for 80 or more megabytes of disk space, whereas a so-called "sub-directory" structure (the basis of HFS) means that the Finder only has to deal with whatever is on the visible top window at any one time,

and does not have to be concerned with what is happening inside folders.

The difficulty in all of this is the plethora of possible combinations of software and hardware. Take for example my 512K-byte Macintosh. Should I use Finder 5.3 and System 3.2 (the latest available at the time of writing)? Apple only recommends Finder 4.1 and System 2.0 for anything less than a Macintosh Plus, and yet I am in contact with a large number of people who successfully use the latest HFS Finders with the 512K-byte (naturally without true HFS, since this is stored in the new ROMS).

General Computer (the US manufacturer of the Hyperdrive series of products) goes one step further and say that its new software release should be used on all Hyperdrives in all Macs, but that it must be run with a system whose version is greater than 3.0! Conflicting information on all sides.

As you may well imagine, all of this is creating some remarkable headaches for those of us involved in customer support. Just try to follow this exchange:

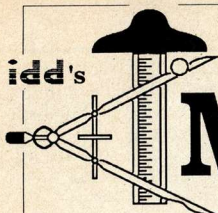
Customer: "Hello! I cannot get my MacPaint to work."

Support: "Oh. What sort of Macintosh do you have?"

C: "A MacPlus."

S: "And can you describe the problem to me?"

C: "Well, when I try to copy my



a step in evolution ...

MacDraft

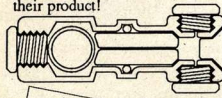
...version 1.2

MacDraft is more than just a programit is a total object-oriented drawing tool,even more, it is a complete environment. Its ease of use, combined with powerful features, allows even the casual user to produce professional looking drawings.

MacDraft will automatically compute all dimensions of objects, snap grids, rulers, area calculations, cursor positions, angles *everything* will be taken care of for you. All that's left up to you to do, is to initially establish your 'Drawing Environment'. Merely choose your optional scale and unit sizes and let MacDraft do all the hard work from this point forward so that you can let your creativity go!

MacDraft is already established as the best selling drawing package for the Macintosh yet, and Innovative Data Designs are committed to its development by taking advantage of the Macintosh User Interface's capabilities to their fullest extent.

MacDraft version 1.2 is a step forward in this evolution. Not only does 1.2 now make MacDraft entirely compatible with the newest Macintosh Plus, and LaserWriter Plusnot only does version 1.2 give you a host of new features (most not found in CAD packages many times the price)but more significant yet (although the least visible), 1.2 contains basic, solid 'building blocks' for further, even more powerful versions — proving IDD's ongoing commitment to their product!



FEATURES INCLUDE:—

Mac User Interface:

All those familiar commands appear under the File and Edit menus. Use your Mouse or a selection of Keyboard 'shortcuts', (V1.2 has a host of new ones). Open multiple windows on-screen. Fully supports 'Switcher'.

Text:

Macintosh Fonts, Styles, and Sizes are all supported, as are Left, Right and Centred justifications. Other features include the option to easily change highlighted text to UPPER, lower, aS eNtReD, or Titled cases. Text will automatically word-wrap and rejustify as the Text Block is resized.

MacDraw Compatibility:

Draw files are fully upward compatible to MacDraw.

Zoom and Pan:

Zoom in or out up to eight times magnification. Pan across the drawing or use the scroll bars. MacDraft will auto-scroll for lines too long for the screen.

Scales:

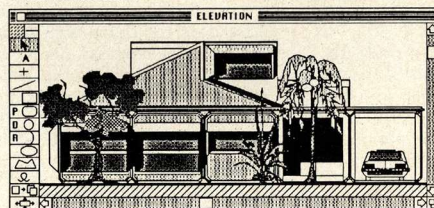
A total of 32 drawing scales in both Imperial and Metric sizes (X4 & X10 have been added to V1.2 for electronic and engineering drawings). Keep miniaturised libraries of objects, ready to paste into your main drawing and —*Presto!* they show up automatically scaled to full size.

Cursors and Rulers:

A full array of standard and custom rulers are available. Reposition Zero co-ordinates at any time. This, plus the fact that the cursor position shows up dynamically in the Ruler Bar, becomes a very useful feature. Cursors are switchable between a small unobtrusive cross: for detailed work, to a full-screen hair-line cursor: ideal for lining up dispersed points.

Lines:

...are available in many thicknesses, as well as Broken: not to mention the full range of Ink patterns. Selection of arrow heads on either end, or both ends of lines are optional. As is, of course, Auto Dimension Lines. Lines can be chosen in either Centred, Outside, or Inside formats: to determine where measurements are read from, and where line-ends align. This is essential for neatly squared off corners and smooth arc-to-line junctions: especially with thicker lines.



Circles and Arcs:

Circles by diameter or radius. Arcs through three given points or by radius.

Polygons:

MacDraft's 'Split Poly Handles' gives you unprecedented editing control over your polygons. Supports multiple smoothing of polygons for cleaner shapes.

Alignment:

A full compilation of optional grid sizes are available in both Metric and Imperial scales to make alignment and quick sketching easy. Multiple objects can be quickly aligned using left or right edges, tops, bottoms, or centres. Once aligned accurately you can 'Lock' objects to assure they are not accidentally moved.

Auto Spacing:

Duplicate objects with a mouse click and each new clone will automatically position itself in the exact increments as you manually positioned your first copy. Ideal for spreading identical objects across a drawing. Alternatively select multiple objects (even dissimilar ones) then select 'Distribute on Line': draw a line in any direction... the objects will simply spring into place, equidistant from each other!

Rotation:

...of objects, individually or grouped, in either 5°, or optional 1° increments.

NEW VERSION 1.2 ENHANCEMENTS:—

Cursor Position Indicator:

Besides the 'View Size' option, already available, you can now get an exact bearing of the cursor position relative to your drawing. Dimensions can now be expressed in optional accuracies from one to four decimal.

Auto Dimensioning:

You now have the ability to separate the display text from dimension lines. Place it wherever you want. Even edit its Font, Style, and Size. Predetermine accuracy of measurements displayed.

Area Calculations:

This powerful feature automatically calculates the area of any object, regardless of complexity. Recalculates after stretching. Format and edit same as above.

Custom Fill Patterns:

In addition to MacDraft's extensive array of 64 Fill and Ink patterns, you can now create and edit your very own custom patterns. These patterns are saved together with your document for future use.

Resize Object Groups or Bit Maps:

You can now proportionally enlarge or reduce whole groups of objects whilst retaining features such as area calculations and dimension lines which will be automatically recalculated in the Drawing Environment. Alternatively stretch bit maps etc. along either X or Y axis.

High Resolution Option

...gives you the best of both worlds. Flick On — for 'what you see is what you get', which in effect snaps' your cursor to the nearest screen pixel. This mode is ideal for page layout and general drawing, it corrects potential misalignment under zoom or rotation. Or Switch Off — for your regular drafting needs.

PICT Format:

Not only can you now save MacDraft in PICT format, but you can also reopen PICT documents for editing purposes etc. This feature is indispensable for todays page layout programs as well as certain plotters.

Hard Disk Install & Backup Disk:

Version 1.2 (and upgrades) will be shipped together with a Master Backup Disk. A Hard Disk Install utility will be supplied with both disks and will support one installation each. You will also be able to recapture your installation from Hard Disk back to Master or Backup floppies. This will ensure more than enough safety factor for the user.

UPGRADE POLICY:

All current registered MacDraft owners will be notified directly from America by IDD, regarding upgrade to version 1.2 — *make sure your registration card has been lodged!*

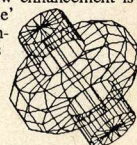
See your favourite Apple Dealer to arrange for a demo...

Vers.1.2 Available; mid to end August.

New release, version 1.1

....features numerous enhancements such as drawing to scale, auto dimensioning, new layout menu formats, auto-scrolling, revolve multiple objects, numerous shift-key effects, plus more. A major new enhancement is a powerful 'lathe' feature to complete Mac3D's 3D modelling capabilities.

version 1.1 available now!



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Australia's most comprehensive listing of Macintosh products — from Infomagic Australia Australia's foremost distributor of Macintosh Products!

Mac 3D represents a leap forward for Macintosh graphics. It takes a simple, mouse oriented approach to let you create technical or free form drawings & designs.



by CHALLENGER SOFTWARE

Features such as custom fill patterns (as large as 64 pixels square), precision tools and shapes from an advanced palette and 360 degree rotation using a circular scroll bar, all

work in co-ordination to give you total control in drawing.

Every design can be viewed from any location within your defined 'Universe' and rotated in any, or all, three dimensions.

Once drawn you can easily modify drawings and designs, giving complete flexibility to discover new options and play 'what if...', in a way you never though possible.

Note Pad

touched-up ThunderScan picture into a MacAuthor document, I get a message saying something about it being scrapped."

S: "Do you mean the message was 'MacPaint is having trouble writing to the scrap?'"

C: "Yes, that sounds like it."

S: "The scrap is just the clipboard area. Do you know what version of MacPaint and the system you are using?"

C: "Ah, I think I have version 1.5 of MacPaint."

S: "And the system?"

C: "Pardon?"

S: "Have you recently had your system files updated?"

C: "Yes, as a matter of fact I have."

S: "And you have MacPaint in your external drive?"

C: "Yes, but how did you know I had an external drive?"

S: "Well, sir, there is a problem with the current version of the system which means that you should try to ensure that MacPaint is always on a system disk for the clipboard functions to operate correctly."

C: "So when is it going to be fixed?"

S: "I am sorry sir, I cannot be sure. Keep reading *Macworld* to keep in touch with the latest system developments."

This sort of thing is all very well, except that it is nearly impossible to keep up to date with all the combinations of systems, Finders and applications that do not get on very well in a particular area. But it does not stop there. Listen in on a conversation from our office, which runs about twelve MacPluses on an Appletalk network with a Laserwriter and Appletalk Imagerwriter II.

Person One: "Phooey! Excel reckons it cannot print the @#*&!+ \$ price list!"

Person Two: "Have you checked the Chooser?"

One: "I never did see the movie, but no, hang on and I will have a look."

Two: "Laserwriter there OK?"

One: "Yep. Hang on — I just realised my page setup isn't correct though."

Two: "Most be something like that, because my document just printed fine."

One: "Hey, now it wants me to go

and turn the Laserwriter off. Says someone is using incorrect drivers."

Two: "Oh? What version number comes up on the top right hand side of your page setup box?"

One: "Version number?"

Two: "You mean there isn't one? Must be really old! Here, use this new printer installer to update to version 3.1, but be sure to use *this* version 2.2 installer (which shows up as 2.3 in the chooser window) or the Appletalk drivers will not correspond to the printer drivers."

Three: (on internal phone) "Are you up to something? My print job just got scrambled. Has there been another update or something?"

Two: "No, sorry, try again in a couple of minutes."

One: "I don't care what drivers we use. I just want to print the price list before the dollar drops again!"

Confusing, you say. Terribly. To complicate matters further for Laserwriter users, the printable area has changed slightly with each new Laserwriter driver release. This means that standard documents print in a different part of the page with different driver versions. The printable area alterations are, however, made with good intentions — the Laserwriter has received some criticism in the past for not being able to print a true A4 page, and the new software is aimed at remedying that.

Each successive release has moved the actual page size closer to the full 297 x 210mm. The problem lies in the fact that there have been so many releases in such a short time, with so little documentation on what has actually changed.

To compound the mind-numbing rate at which things are changing in the Macintosh world at present, third-party software developers are finding that they must issue new releases of their products in order to operate correctly with new Apple system software. The most obvious example of this has been the rash of updates to cope with the HFS concept in general.

Products such as MacFterminal, MacPascal (and in fact nearly all

language programs), Think Tank and even the Font/DA Mover have all had recent new releases with specific enhancements for HFS (as it was first released with the Apple Hard Disk 20). Add to this the arrival of the Macintosh Plus with its 128K-byte ROMs and a slightly different version of HFS, and the software authors must be working late at night and even "a few legal holidays" (to quote a phrase most early Macintosh hackers would recognise) to keep up.

I am told from a number of reliable sources that many of these changes really stem from a hasty issue of HFS, and even the Macintosh Plus, in the first place. That is hardly news, but it would appear from the groans issuing forth from contacts working with a variety of software developers that Apple have still not offered full details on how HFS works, and how to use it properly from within a program.

At least one long-anticipated piece of software, Hypernet, has been held up for more than three months for this very reason (although an added complication in this case is Appletalk, whose protocols still have not been fully defined by Apple).

HFS, however, is not the only problem. It would seem that even the ROMs in the Macintosh Plus are not all the same. John Hare at Apple's Melbourne office has been misquoted as saying that "some ROMs are more equal than others," but this optimistic outlook does not quite answer the lingering questions many users have.

We now know that there are at least two versions of the Macintosh Plus ROM in Australia, Version 1 and Version 3. Incidentally, rumor has it that Version 2 was sent to New Zealand and sunk by a deputation from Jean-Louis Gasse!

The responses from Apple on this subject have been interesting to say the least. Apple US said: "We did not ship early version ROMs to Australia, and only one ROM version has been released". The word from Apple Australia when confronted with the news that there were at least two versions here was "Oh? Er, yes, there are no major differences, just a little patch for the SCSI port."

In spite of the puzzling nature of

the ROM question I am now convinced that we have no need to fear terrible problems from our ROMs. In its time in an ever more discerning marketplace the Macintosh Plus has made deep inroads, and has been very well accepted.

There appear to be no major flaws in the new features, unusual compatibility oddities excepted, and the product has obviously matured. The success or otherwise of the Macintosh in the all-important corporate market has been discussed at some length in the press and in

with MacServe from Infosphere and the Hyperdrive from General Computer.

This is disturbing in that rather than improving the operating state of your Macintosh (as an update is surely supposed to do) the precedent now appears to have been set for a humble system change to upset a previously well-balanced applecart. Who would have thought that the difference between 3.1.1 and 3.2 could be so earthshaking?

In the course of considering all this we must remember that, regardless of the things which annoy

No matter what hurdles we face with new software (or perhaps the spectre of new ROMs) from Apple, each step is forward. Ultimately the current storm of bits and bytes deep in our Macs will calm, and we will be left with a highly polished appliance of which we may be justifiably proud. What refining process doesn't cause some pain?

The price we pay for a "user-friendly" device is incredibly complex software operating at a deep level that we need not understand. In fact it is the Macintosh's aim that the user should not even be aware of the overwhelming number of operations which must be performed to keep up the rather complicated facade of ease of use. It is inevitable that as that ease of use is honed, and hence the underlying software becomes ever more complex, some additional gremlins will emerge to be hurriedly despatched.

Also, as the programs become increasingly clever they tend to increase in size. The result of this process will be a basic software building block which is reliable, transportable (we must now consider future Macintoshes which need to be compatible with existing system software) and largely transparent. It will also be somewhat bigger than the software we all use now!

So what future should we see with regard to the Macintosh system software? Already System 3.3 is in the offing in the short term, so that should provide some amusement and frustration. Perhaps in the longer term we should look forward to the day when Finder B.7 zaps away at our verbal command and returns in microseconds with our requested files and appropriate application programs all loaded up and ready to go, while System 9.4 operates totally transparently, merrily kerning, fetching and writing unbeknown to us.

The problem then will be finding the storage media big enough to put the System Folder on, let alone the applications! No doubt the excitement of Apple software revisions will continue for many years to come. Orwellian predictions? Rather more Pickwickian I suspect.

MAC

“Apple has provided all of us with a superb piece of equipment. It is also committed to making our Macintoshes more useful and more reliable.”

trade journals. Now, MacPlus in hand, Apple is certainly on the right track. The Macintosh is finally a machine truly worthy of space (no matter how small the footprint) on an executive desk.

Overall speed, memory and disk space improvements have meant that there will be many more Macintoshes around, which brings its consequential increase in the amount of quality of software. This renewed upsurge of interest in the Macintosh would have waned very quickly if the MacPlus ROMs had proved unreliable.

Once again we trip up on the system software though. The corporate environment is not conducive to having software updates performed at monthly intervals, especially when these alterations are not transparent, as in the case of Laserwriter driver files. Even so, all this would probably be of little consequence if it were not for the fact that the latest Apple system update has caused new and unheard-of quirks with until now quite reliable utilities, notably the printer spooler programs supplied

us, Apple has provided all of us with a superb piece of equipment. It is also committed to making our Macintoshes more useful and more reliable. It is easy to become bogged down in the absurdities of situations such as those described without realising that each change brings with its new features, enhanced options, improved performance — all the things you would expect from a new brand of washing powder.

There are certainly problems too, but who of use would go back to Finder 1.1g, no matter how great we thought it was when we first saw it? At present Finder 4.1 and System 2.0 seem to be about the most stable and reliable things around, but how would I file my three or four megabytes of MacWrite documents (yes, I confess I still use MacWrite) without Finder 5.3?

Choose Printer was marvellous, but how could our office operate without the means to name users provided by Chooser, let alone the improvements in the overall reliability of changing printers?

THEY'RE HERE! MAC FOLLOWS AT

12 Classic Adventures Star Sys I	586	EtherMail/3 Server Ima	1350	Financial Planner Timeworks Ipp	122	Housekeeper, The Aegis Inc	104	Single Line Isometric Piping I	179
12-C Dreams Phoenix Ipp	65	EtherPrint/3 Server Ima	598	Financial Planning Approp Ipp	113	Human Forms Th	132	Single Line Orthographic Piping	179
1stBase Desktop Sys I	214	EtherShare/3 Server Ima	630	SPECIAL Flight Simulator Microsoft	53	I Know It's Here Somewhere Hay Inc	81	Two Line Orthographic Piping I	179
1stMerge Desktop Sys I	103	Communications Edge	244	Flo & File I Micro Innovation Inc	72	SPECIAL Icon Libraries PBI Software	34	MacCalendar Icd	110
1st Microcomputer Ipp	41	Complete Accounts Ru	Call	Fontographer Ipp	19	Fun & Games or Business Ipp	34	MacChallenger Aegis Inc	57
1st Programs	101	Comprehensive Grammar Review	244	Fontographer Ipp	483	Icon Switcher PBI Software Ipp	36	MacCharlie Dyna Comm I	3445
A Mind Forerover Voyaging Infomac Inc	62	Queue	189	Fuente Fonts Cassidy Inc	70	Images I	59	MacCheckers wReversi Vindex Icd	67
A+ Optical Mouse Mouse Systems Inc	136	Compu-Bag Innovative Ipp	149	Fuente Triplane PBI'sware Ima	88	Imagewriter Carry Case I/O Desi Ipp	47	MacComman Creighton Inc	47
AB/Box Kensington Ipp	144	CompuServe Starter Kit CompuServe	30	Fuente Fonts Cassidy Ipp	77	Imagewriter Cover I or II Envision Ipp	26	MacCopy V2 Tesseraet S'ware Ipp	89
A/C's Payable BizMac Inc	660	ConcertWare + Music Libraries Icd	374	SPECIAL Full Paint Ima	124	Imagewriter Cover I or II Kensington Ipp	20	MacAccountant Digital Etc I	287
A/C's Payable Palantir Inc	196	Construction Estimator Reston Inc	98	Forbidden Guest Priority S'ware Inc	53	Imagewriter Cover Wide Cover En Ipp	31	MacCover Soft	34
A/C's Payable Peachtree Ipp	209	Consultant Ods Inc I	273	Forbidden Monogram Inc	93	Imagewriter II Carry Case I/O Ipp	118	MacDaisy Wheel Connection Ass Ima	160
A/C's Payable Richey Inc	224	Control Centre Kensington I	244	Fortran 77 Development Sys Softsch	414	Imagewriter Wide Carry Case I/O Ipp	118	MacDasher Kaz Bus Sys I	Call
A/C's Payable Super I	374	Copy II Mac V Central Point	82	Fortran 77 Language Compiler I	341	In House Accountant United Soft Inc	258	MacDesk Interfix I	159
A/C's Payable Sierra on Line Ipp	329	CPM for the Macintosh I/Oware I	638	Fortran Compiler Microsoft S'os	408	In Motion Art Armour Inc	238	MacDesk Catalog I	142
A/C's Payable (New) Back to Basic I	205	SPECIAL Cricket Graph Cricket Ima	282	Fractals Graphics Ima	46	In Touch S'ware Masters Inc	29	MacDoctor Ver 2.5 Cri	156
A/C's Receivable BizMac Inc	948	Crunch Paladin Soc	358	Fracture Sierra On-Line Inc	50	In House Accountant United I	214	MacDraft Idd Ima	139
A/C's Receivable Palantir Ipp	197	Cut 'N' Paste Dreams Phoenix I	53	Front Desk Layered Inc	180	Infidel Infomac Inc	62	MacDrafting I General Cri	388
A/C's Receivable Peachtree Ipp	206	Cutthroat Infomac Ima	39	General Ledger Future Design Ipp	574	Info Network Source of Line Inc	60	MacDrawing 1.1 Kitchens Cri	238
A/C's Receivable Sierra on Line Ipp	329	Cyborg Brotherbund Inc	54	FunPack Vindex Inc	49	Inside MacPaint (Book) MacPress Inc	29	MacDrawing 1.2 1.3 Electronics	338
A/C's Receivable (New) Back to Basic I	205	Daisywheel Connector Microsoft	229	Futurall Miles Inc	61	Inside MacProject (Book) Micro Inc	34	MacDraw Apple App	265
Accessory Disk I	180	Da Vinci Fast Start Ipp	94	Futura Infomac Inc	58	SPECIAL Interface (New) Layered Ima	202	MacEnhancer Microsoft Inc	125
Accessory Pack #1 Silicon Beach Ima	53	Da Vinci Building Blocks Hayden Inc	110	Gallery Microcam (Core Module) Ipp	673	Infoshare Mac I	214	MacEnvision Connection Assimilati Ima	381
Accountants Choice Sierra On-L I	879	Da Vinci Buildings Hayden	270	Game Disk #1 Tr	Call	Inventory BizMac Inc	669	MacFinance Sup	214
Acta Ima	79	Da Vinci Com Interiors Hayden Inc	270	Gateway Priority S'ware Ima	57	Inventory BizMac Inc	669	MacMacCarroll-Di I	43
Address Book Queue Intell I	63	Da Vinci Houses Hayden Inc	270	SPECIAL Gato Spectrum Ima	57	Inventory Control Palantir Ipp	374	MacForms Data Entry I	99
Adult Fonts	232	Da Vinci Interiors Hayden Inc	63	General Accounts	64	Inventory Manager Super I	174	MacFORTH Level 1 Creative Sol Icd	174
Single Laserwriter 2 or 3 Font Pack	232	Da Vinci Landscapes Hayden Inc	63	General Ledger Back to Basic I	196	Inventory wAccRe Super I	565	MacFORTH Level 2 Creative Sol Icd	174
Single Laserwriter 2 or 3 Font Pack	232	Dayton Math Tools P1	41	General Ledger BizMac Inc	816	Investment Planning App Ima	120	MacGamon Expert Software	49
Multi Laserwriter 4 Font Pack	670	DB Master Stone Ima	212	General Ledger Check Mark Ipp	180	Invisables-Hint Booklets (each) I	13	MacGamon/Cribbage Vindex Icd	67
Advanced Development Toolkit Softsch	213	Deadline Infomac I	67	General Ledger Future S'ware I	492	Jazz Notes (New) Layered I	118	MacGenius System Control I	63
Airborne Silicon Beach Ima	46	Decision Map Softstyle Inc	183	General Ledger Future S'ware I	492	J. K. Lasser's Money Manager Simon	173	MacGAS Ap	325
Amazon Telarim Inc	57	DecoWriter Fonts S	128	General Ledger Palantir I	173	James Bond: A View to Kill Minds Inc	42	MacGenie Applied	325
SPECIAL Ancient Art of War Bro	57	Desk Organizer Warner Inc	128	General Ledger Peachtree I	208	Jazz Version 14 Lotus Inc	615	MacGolf (New) Pica Ima	81
Appointment Diary Jan S'ware	31	Desk Toppers Harvard Assco Ipp	31	General Ledger Super I	374	Jazz Notes (New) Layered I	129	MacGraphics DNA Inc I	34
Archipack MacDraw V2.0 Cri	306	Desktop Calendar Vindex Inc I	121	General Ledger Symposium I	420	Jazz Notes (New) Layered I	129	MacGrid Century Inc	63
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**More Mac programmes together with new education section
see page 26.**

dBase Mac is coming

By Philip Jeeves

As this issue of *Australian Macworld* was going to press Ashton-Tate was preparing to announce the release of dBase Mac, the first of a suite of Macintosh applications the company has secretly been working on for the past nine months.

Known internally as "Dottie", dBase Mac is expected to be available within the next month and will be followed within three months by Glass, a challenger to Microsoft's Excel. With two products already in the pipeline it would not be unreasonable to assume also that Ashton-Tate is looking at either acquiring or developing an advanced word processing application for the Macintosh.

dBase Mac is expected to provide direct access to IBM and compatible database application files as well as to Ascii files, allowing the exchange of files from applications such as Microsoft's File and Blyth Software's Omnis.

dBase Mac is expected to follow the standard Macintosh mouse interface of "point and click" and to provide users with an extremely powerful but easy to use relational database.

Keith van Klink, managing director of Ashton-Tate, said it would provide flexible report formatting, including MacDraw-like capabilities as well as graphic image storage, and contain a variety of built-in fonts and type styles for use on the LaserWriter and LaserWriter Plus.

Van Klink said dBase Mac would provide developers with a powerful programming tool for development work and turnkey applications because it provides a straightforward, full featured programming language.

I have been testing an Alpha test version of the product for several weeks now and it is by far the most powerful and easy to use database I have discovered for the Mac. Its

advanced interface design allows sophisticated multiple file reports to be generated without any knowledge of programming at all", he said.

"It also has a unique and intuitive graphic representation of database structures and their inter-relationships, making it easy to create, modify, access and query data fields," he added.

Van Klink also said that the company had no plans to begin direct marketing. "Our policy in Australia is always to go through distributors and we have no plans to market directly as we do in the US," he added.

Van Klink also said that the company had no plans to begin direct marketing. "Our policy in Australia is always to go through distributors and we have no plans to market directly as we do in the US," he said.

According to Van Klink, Ashton-Tate "is looking to build a strong support and marketing staff in Australia to provide dealers with support in more than just an order-taking capacity as has been the case in the past".

The Australian distributor for dBase Mac and Glass is expected to be Imagineering because Ashton-Tate believes it has already proved itself to be one of the most successful marketing companies in Australia. The general feeling inside Ashton-Tate is that Imagineering is the most suitable company to market the new products, and the only one which would have the resources to dedicate to ensuring that the products are marketed with a high profile.

This decision is despite the fact that Software Corporation of Australia already distributes Ashton-Tate's highly successful Multimate application. Other companies overlooked by Ashton-Tate are Arcom Pacific, InfoMagic and Sourceware, all of whom have experience in the marketing of Macintosh applications.

Macintosh printing bureau

By Philip Jeeves

A former Melbourne psychologist plans to use Macintosh computers and Apple laser writers to revolutionise the instant printing industry if the client provides camera-ready material.

"What we are addressing is the market where people have an idea or a rough sketch of what they want and require it to be made into camera-ready copy and then printed quickly. By using the Mac and the LaserWriter we can offer a fast customised design service as well as true instant printing with a turnaround time of less than 24 hours," he said.

Frey said SOS planned to open operations throughout Australia in the next twelve months, but was concentrating on Victoria where it has three sites operating and is negotiating for two others.

According to Frey, SOS will also provide the answer to the problem facing owners of Macintoshes who have previously wanted information printed on LaserWriter, but have not had access to one. "As part of our service we will offer a full service to owners of Macs who want to bring their formatted disks into our office, leave it and pick up a laser-written copy later that day," he said.

Frey said the whole emphasis of SOS was that it offered inexpensive high quality printing to people who needed letterheads, brochures and business cards printed in a hurry.

"The way we typically work is that someone will walk into our office with a pencil or rough sketch of what they want and while they have a cup of coffee we will prepare it on the Mac.

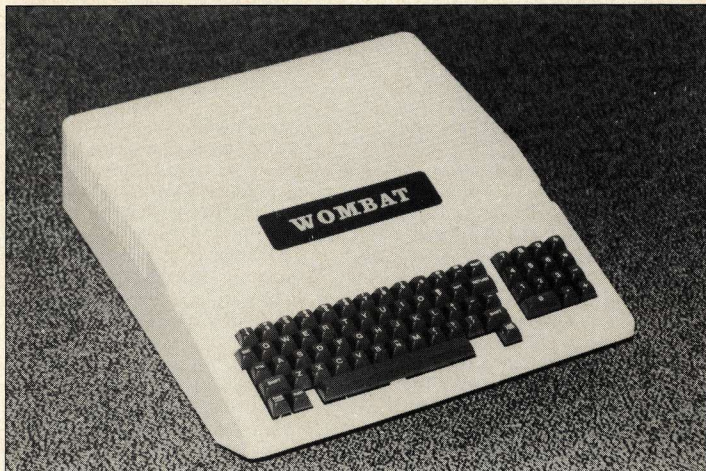
Because it is done while the customer waits it means that any minor changes they might want can be made instantaneously.

"While the proof is being prepared the client can select the paper stock he wants the job printed on, and the ink color for the various jobs. If the customer wants to wait another 15 minutes he can walk out with 1000 copies of his letterhead or flyers which we can print rough on a laser photo copier or return two hours later for a fully offset printed version of his material" he said.

Frey said SOS was looking for owners of Macs interested in starting franchise operations in their area. "Ideally they will be willing to buy a laser writer to prepare proofs for their clients, but if this is not possible at the beginning then they can send the material to us via a modem and we can courier the finished work back to them the same day", he said.

Frey said SOS was concentrating on attacking the mid-level printing market and was not only offering logo designs for letterheads and business cards but a full range of printing to meet the requirements of small and medium-sized businesses. He said that SOS would offer everything from one-color newsletters to full five-color production runs "at around 50 per cent cheaper than conventional and instant print operations".

With prices for an A4 page of plain text starting at \$30 and computer graphics from \$20 the cost of customised stationery for small and medium-sized businesses has never before been so affordable. If everything goes as planned this former psychologist and his Macs may become the bone of contention of many a traditional offset printer in a very short time.



The Wombat personal computer, centre of the Apple Computer vs Michael Suss/Computer Edge copyright case, is unlikely to return to Australian computer stores.

And finally

By Philip Jeeves

After four years and countless hundreds of thousands of dollars the ongoing saga of the Michael Suss/Apple copyright challenge has all but drawn to a close.

But before the final chapter of this epic case can be written the Federal Court of Australia must decide what damages it is going to award Apple after its successful trade practices case. And, depending on the damages awarded at this stage, the whole thing could then go before the High Court on appeal from Suss. In the meantime, Suss is going to have to decide if he really is going to pursue his cross-action claim against Apple for damages.

At the moment he is telling anyone who will listen that he has already launched his much-talked-about claim for compensatory damages, unspecified damages and pecuniary damages. At the time of writing though, Jim

FitzSimons, from Abbot Tout Creer and Wilkinson, the company that acts for Apple Computer, said Suss had filed a cross-action claim during the proceedings, but added that no action has yet been listed for the claim from Suss.

Before one looks at the what effect the decision is likely to have on Apple and other vendors in the future it is necessary to look at who the winners and losers are in this case, if, in fact, there are any.

Michael Suss could be described as both, because although he won the case on appeal, largely because of the fact that the case was heard under the old Copyright Act, the battle cost him his business and forced him to put Computer Edge into liquidation. Of course if he is successful in his counter-claim, he may be able to recover some funds for his failed business.

Apple Computer, the really big player in the whole issue, saw its

loss become a victory and then a loss again as the case went before court after court on appeal. While it has been declared a loser in this regard, the resulting publicity probably did not do it a great deal of harm.

According to Apple, one of the aims of this copyright case was to highlight the inadequacies of the Australian copyright laws at the time the action began, and, considering the toughening up of the copyright laws, Apple and the industry in general could also be described as winners. After its lengthy crusade through the courts, the Australian government has strengthened the Copyright Act, providing vendors with the protection they need.

Apple Computer Australia managing director David Strong hardly sounds like a loser when he said: "When this whole thing

began we were mainly concerned with the vagueness of the existing Copyright Act. While we were very serious in attempting to protect our copyrights, we were also hoping that someone would put up a strong defence in order for the law to be clarified and strengthened for everyone."

It is apparent that Strong does not consider Apple to be a loser, and although appeals before the Supreme, Federal and High courts are not cheap it is really doubtful if the costs would have had any serious affect on Apple's revenue. The same cannot be said for Suss, of course.

By far the big winners in this case have been the solicitors, barristers and Queen's Counsel used by both sides throughout the whole case. With solicitors earning about \$800 a day,

barristers \$1000 and QCs \$2000, it is not really surprising that the mere mention of the case causes smiles to come to the faces of many of the legal fraternity.

If one wanted to be cynical, one could say the really big losers were the general public. Once Suss put Computer Edge into liquidation his funds very quickly ran out. However, because of Australia's legal aid system he was able to continue with his fight, with the taxpayer picking up the tab for his legal defence.

Whether or nor the Australian taxpayer should or should not have had to pay for this precedent-setting case is an arguable point, and one on which this publication does not wish to pass comment. Nonetheless, regardless of who is footing the bill, it is no secret tha since the long-running battle the Australian Copyright Act has been beefed up considerably.

While the changes are, at first, pleasing to vendors, the Act still leaves a lot to interpretation by individual judges who might sit in judgement on future cases.

This was explained in some detail recently to a gathering of the Victorian Macintosh users group when they were addressed by Suss and Richard Horsfall from Corrs Pavey Whitting and Byrne. At that meeting Horsfall said it was going to be an interesting time to see what happened under the new Copyright Act.

"If any loopholes are in the current legislation I am sure it will be covered. I think what will happen is that the judges will go out of their way to protect the Apples of this world, so there is an air of warning in the marketplace and I hope it will be interpreted to protect the authors of the copyright," he said.

Horsfall added that the new Act is still open to individual interpretation and "still arguable".

This view is also held by FitzSimons, who said there were still quite strong arguments to

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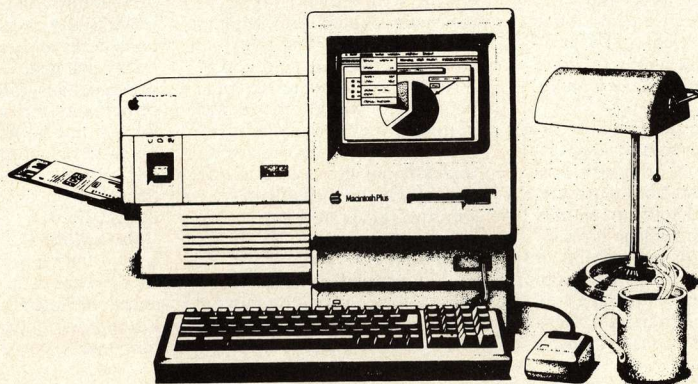
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define reproduction under terms of the Copyright Act.

"The difficulties arise where object code is involved, as it cannot be seen. As the Act stands at the moment it is questionable whether copying of object code constitutes a reproduction under the amended Act. Certainly the Act has been beefed up, but it will probably take another case to clarify the effect," FitzSimons said.

While the Copyright Act may still be open to individual interpretation, it nevertheless now provides both hardware vendors and software authors with a more realistic form of protection for their efforts and endeavors. While some people might see this as being a bad thing, it is undoubtedly viewed in quite the opposite light by

those who rely on the income derived from the sale of software applications and code that they have devoted months to developing.

The shareware and MacHonour system is well known to Macintosh users and equally well known is the fact that many people do not bother sending any money to the authors of software sold under this system. These are the same people who would scream blue murder if they did not receive their pay cheque on time, and undoubtedly also the same people who advocate that software prices should be reduced.

While the decision of the High Court will continue to cause debate in the computer industry, Suss has already said that he is not going to attempt

to sell the Wombat again and that in itself is fair indication of the uncertainty of the new Act. The message is also loud and clear to everyone else in the industry that attempting to take advantage of technicalities in the Copyright Act is likely to be very unrewarding in the future.

While the case may have set precedents and resulted in laws being changed, it has also generated an inordinate amount of publicity for both sides. The bottom line is that the new laws are much tougher and provide a much lower chance of success than they did when this whole thing started.

Australian Macworld is glad to put the whole Suss/Apple issue where it belongs, in the annals of Australian computer history, one hopes never to be raised again. □

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Orbiter



Imagineering
512K-byte/MacPlus
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Orbiter is the latest space shuttle simulator for the Macintosh and goes through the actual commands and procedures used by NASA in a realistic and believable manner. On January 28, 1986 the space shuttle Challenger exploded 75 seconds after launch, killing the seven crew members on board.

The fatal launch was the 25th shuttle to be launched by NASA and saw the space program all but halted while a top level investigation was conducted.

A dedication on the first page of the manual states that "Orbiter is dedicated to the memory of the crew of the Challenger" and goes on to list the names and occupations of those killed in the accident. The dedication also states that these men and women were pioneers who understood the risks associated with spaceflight and that "space exploration will continue".

Written by Spectrum HoloByte, the same people who brought you Gato, the game provides an excellent reproduction of the command sequence used in the final moments leading up to the launch from the Kennedy Space Centre on a mission into space, and the sequence involved in getting it back again.

The generous and imaginative use of high quality graphics and sound gives Mac users the opportunity to pilot a shuttle into orbit and perform a set task without any of the physical dangers associated with an actual space mission.

The two-disk package includes a comprehensive manual that adequately explains the terminology and abbreviations used in space missions, and also provides a rather comprehensive list of acronyms that every shuttle crew member should be familiar with. Among the tasks that can be assigned to you as the

commander/pilot of the shuttle are the launching and repairing or recovery of a number of space satellites, the building, and docking with, an orbiting space station, and the launch of a deep space telescope.

The simulation also allows you to go for a walk in space through the use of a Manned Manoeuvring Unit, MMU, which allows you to leave the safety of the shuttle and perform repair and construction work on various objects. While this all might sound relatively easy, the various activities must be performed in a set time period and the random mechanical failures and complications that arise all contribute to whether you will return safely or spend the rest of your mortal days floating around in the void of space inside a dead shuttle.

Before actually getting into orbit you will go through the pre-launch safety checks that shuttle crew go through before launch, where you will be instructed to verify the operation of various pieces of equipment. The simulated voice of mission control presents a believable-sounding imitation of what astronauts hear from the headset of their bulky space helmets as they lie strapped into their seats in the final minutes leading up to launch and dramatically increases the authenticity of the game.

However, for all the initial training flight "walk through" it is advisable to pull down the "Special" menu and alter the configuration window to receive a condensed set of instructions from mission control which precludes a lot of the pre-launch tests. It is also advisable, for the first couple of launches, to avail yourself of the onboard computer facility and auto pilot, as without it you are likely to end up making a hell of a mess of the launch site and polluting the atmosphere, engulfed in a massive ball of flames.

The same window can be called up through the use of keyboard commands which are extensively represented for calling up all of the vital views required in the game. The cathode-ray tube, CRT, display in

the bottom right hand corner of the screen can be configured for various technical information and provides a constantly updating graph and list of specifications of your launch and position as the shuttle rockets towards the stars.

The manual describes the game as a "realtime" simulation and claims the various control panels "model the controls and instrumentation found in the actual space shuttle Orbiter". Whether they are or not is irrelevant as there is enough detail in the various views and windows to ensure that the game does not get boring for anyone, with one exception.

As a realtime simulation there are times when the game tends to drag on slightly while the shuttle reaches its orbital height as defined in the mission. But, the clever use of Time Compression found under the Special menu helps to speed up these moments although a higher rate of compression would be advantageous.

While the present generation of space shuttles does not carry weapons into space, the Orbiter you get to pilot has a Test Weapons Panel with both lasers and missiles for "use with simulation scenarios which may be developed at a later date" according to the manual. While you cannot actually shoot anything out of existence the weapons panel will indicate whether your target is in range and if your shot would have hit or missed the target.

By dragging down the view menu you can change the direction you are looking from forward main station to the aft main station with a change in control panels which allows you to look into the cargo hold from where you will launch or store objects. You can also choose a full screen overlay map that shows your position relative to the earth far below, or your low and high level orbit positions in relation to other orbiting objects.

Once the mission has been completed and it is time to return to earth the dangers of space travel are again brought back to you. If your angle of descent, speed and numerous other factors are not right you will find yourself bouncing off

the atmosphere layer or exploding into million of tiny pieces and wasting a very expensive shuttle.

Once you have successfully mastered the walk through simulation you can then select other missions to complete and choose between using the onboard computer and the autopilot to get you into space and back again, or going it alone and flying the craft yourself. Either way the game provides countless hours of entertainment, and by far the most realistic and closest view most of us will get of the inside of a space shuttle.



Grid Wars

Grid Wars



Info Magic
512K-byte/MacPlus

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Despite the superior graphic capabilities available on the Macintosh the number of very good high quality arcade type games available in Australia is few.

However, Info Magic has changed that in the past couple of weeks with the distribution of Grid Wars from Ann Arbor Softworks. Grid Wars might not be the latest piece of entertainment software available for the Macintosh on the world market, but it is definitely the latest product available in Australia.

The scenario places you, a lowly human space traveller, in the midst of a galactic bar and grill which serves as the watering hole for local galactic toughs from the neighborhood star system. A quick glance around the smoke-filled room makes it evident that you have stumbled into a place where humans are not welcome.

However, now that you have entered this intergalactic den of iniquity the house rules stipulate that you must compete on the Grid Wars gaming tables. They also stipulate that you must face any and all

challenges and somehow you just know there is going to be no shortage of creatures ready, willing and more than able to take you on.

The house rules state that if you win you can stay and drink, but you also have to shout the whole bar. Of course, if you lose you will be unceremoniously thrown out.

While the game may not be state of the art in Mac sound effects or graphics it is certainly addictive.

As the game opens up you find yourself at the end of a long black table behind a barrier of three horizontal grids. Your chosen challenger then fires a variety of weapons down the table in your direction.

While the patrons of the bar and grill are not overly fond of humans they do at least provide you with a sporting chance of defending yourself. At your disposal are three weapons of varying types, all of which have different effects and amounts of life. Your principal defence is in the form of a cannon which is operated by the mouse button.

Moving the mouse from side to side and backwards and forwards results in movement of the aiming device through which you attempt to line up and shoot the projectiles being hurled down the table in your direction. While the cannon operates like a gun and only fires at one

target it does give you the means of rapid and continuous firing for as long as the mouse button is depressed.

More effective, but more limited in its availability, is the torpedo, which is activated by depressing the space bar which is also aimed through the use of the mouse and onscreen sights. While the torpedo is not very effective against the hurtling shrapnel-like projectiles that constantly erode the protection of your three layer grid system, it is quite effective against the wall that gradually and constantly moves towards you in an attempt to overrun your position and push you off the table.

By far the most effective, and also the most limited in the number of times it can be used, is the vaporiser activated through the backspace key.

As the name suggests, the vaporiser immediately vaporises all the projectiles your opponent is firing down the table at you. But it needs to be used sparingly and at only essential times, because after its initial use it only becomes available again after your score exceeds certain preserving levels.

Despite the fact that many of the bells and whistles are missing on this game it is by far one of the best arcade style games available for the Mac. Its simplicity of use and rapid pace is certain to prove popular with people of all ages and will no doubt see it joining Airborne as another Macintosh classic.

MAC

AI LANGUAGES FOR THE MAC

Marc Wigan continues his three-part series on AI and the Mac with the second part, AI languages.

The Mac has attracted quite a range of expert systems languages and tools in its short life and this discussion of AI on the Mac is in two parts: the languages used for artificial intelligence applications and the expert system shells which are the equivalents of Lotus 1-2-3 and other proprietary application packages by which users build their own applications in a tailored form.

The languages available on the Mac are the Lisp and Prolog, and the specialised languages based on OPS V (a family of languages built in Carnegie-Mellon University in Pittsburgh about 15 years ago). Each of these languages has a different approach and history, and some details are worth knowing to appreciate what each has to offer.

Lisp

Lisp is an old language, which arose along with Fortran in the 1950s, and, like Fortran, is a solid survivor in the 1980s with the structure of the language being progressively brought up to date. Lisp is designed to handle lists of items, and to treat all objects of data and program as symbols it can manipulate. As a direct result Lisp can be used to build new languages, and there are several dedicated Lisp machines with powerful graphics and multiple languages, based entirely on Lisp.

Texas Instruments recently completed a program to place Lisp on a single chip (which is far more complex than a 68020, and already runs at 40MHz) to deliver artificial intelligence capabilities for machinery in tough industrial environments, including missile and space applications.

functional programming ideas. Several Lisp compilers are commercially available, with Expertelligence's ExperLisp and Metacomco's Cambridge Lisp the best known. More advanced versions of Lisp, such as MacScheme from Semantic Microsystems, are also commercially available. All of these Lisp systems are readily available in Australia.

Prolog

Lisp has been the root of most US artificial intelligence work, and there is a very strong tradition based on MIT, Carnegie-Mellon and other major universities, fed by the availability of dedicated Lisp machines as advanced graphics workstations. The European tradition is rather different, where Prolog is used in teaching history, English and other subjects in primary schools, for advanced expert systems, and even for commercial application programs. The complete Z80 microcomputer Prolog interpreters which appeared early in the 1980s in the UK, but only recently saw wide distribution here in Australia, had a major influence in the spread of the language, and these micro-Prologs are quite capable of non-trivial development work.

The Mac has a third generation microcomputer implementation of Prolog, MacProlog. This is an incremental compiler and achieves a substantial multiplication in the power of similar interpreters. Interface Computer and Springer-Verlag have been developing a family of Prolog interpreters which, from all appearances, are closely related to the Edinburgh

University portable Unix Prolog interpreter and compiler, written for the French-speaking market in the first instance.

OPS V

Lisp and Prolog are fairly general purpose languages, but there are also specialised languages designed specifically for expert systems work. The best known of these is the OPS family of languages associated with Charles Forgy at Carnegie-Mellon University. OPS V is the interpreter in which the RI/XCON expert system was written, which now permits DEC to configure VAX-family computers better than their own experts can normally do. OPS V is written in Lisp and is available as a public domain program from Carnegie-Mellon in its raw and basic form as a Lisp program. There are simple OPS V systems available commercially with very limited capacity, based on this public domain source. There are also very powerful and extensively developed versions of OPS V on the Mac, with complete windowing development environments built in. OPS languages are built around a basic loop of match, check, action, which forms an intrinsic part of the language up to OPS V. Artelligence in the US has developed such a system for larger machines, and transported it down onto the Mac as a full system.

The currently available versions of languages described as OPS V on the Mac include Expertelligence OPS V (which needs Expertelligence Lisp, and has a 300 "rule" capacity in its present form), and Artelligence's OPS V+, which is a windowing production environment ported down from the windowing

graphics oriented SUN and Apollo systems.

Forgy has developed a considerably more general and powerful OPS language, OPS 83. OPS 83 relaxes this single means of executing tests on expert systems rules, and also offers the added performance and ease of provision of a runtime environment added by being a compiler. A compiler provides far more power per OPS "rule" statement, and a 30 times improvement in execution speed, permitting small microcomputers to embarrass VAX computer systems running operational expert systems based on OPS V. The Mac versions of OPS 83 are under development, and the IBM PC version is already available.

Lisp standards

There are many standard Lisps, and with such a flexible language the authors of most Lisp systems cannot resist the temptation of adding extra features to their language to bring their system up to date in the new constructs and features that progressively appear. There have been quite a number of attempts to produce an agreed standard Lisp to bring the common basis of the Lisp languages available closer into line with the advances that have been made since the initial de facto mainframe standards of InterLisp and MacLisp standards of the 1970s.

Portable Common Lisp is one of the most successful of these recent Lisp specifications, and there are several microcomputer implementations which offer almost all of the features of the Common Lisp specification, without too many features being implemented differently.

XLisp is a public domain Lisp system. It is an experimental Lisp interpreter written in C by David Betz of New Hampshire in the US. While it draws heavily upon the developing ideas of Object Oriented programming, and was specifically written to allow experiments with this

approach, the author has chosen to bring the core of XLisp closer to the Common Lisp Standard with each update. The implementation on the Mac is readily available at the 1.5 level of revision, and is a nice compact system.

A tiny Prolog interpreter in XLisp is included in every XLisp system. While no substitute for the more powerful Prolog systems, it provides a fascinating way of getting inside the ideas underlying Prolog in a public domain piece of software.

LispKit is a highly portable version of a sparing and economical form of Lisp. It is available under UCSD p-system already implemented for the SAGE 68000, and with a Pascal bootstrap to permit other p-system machines to bring it up. The Mac implementation of the interpreter in the high performance form is not yet complete. The code and the manuals are available in the public domain from the University of Oxford in the UK, but a vanilla UCSD p-system must be on your Mac to use it. LispKit contains another Logic language as an example of the use of this form of Lisp. Writing variants of Prologs is a favorite hobby of Lisp advocates, but the reverse is entirely inappropriate. AI languages also have their fierce advocates, but there is a sound reason for writing Prolog systems in Lisp. Prolog is an exciting and enormously powerful way of programming, but it is essential at times to be able to get at a conventional programming language directly from Prolog. Access to an underlying Lisp is therefore a practical advantage.

Cambridge Lisp grew out of symbolic algebra and mathematics investigations, which led to the massive Reduce symbolic algebra system. It was written for the Tripos operating system for the big IBM mainframes at Cambridge University, and subsequently ported down to 68000 systems by Metacomco.

The subsequent additional port across to CP/M 68K makes Cambridge Lisp compiler available on the Mac, and a large address space Mac (such as a MacPlus) can even run Reduce. As a modified version of Tripos itself has been transported to the Amiga, the Lisp compiler is readily available. No native version of Cambridge Lisp has yet been created for the Macintosh.

Expertelligence Lisp is a compiler for the Mac, distributed by Expertelligence for the author (Taylor). It has quite good performance, but also has some restrictions in the range of functions that it can provide at present, and appears to be still encountering initial teething problems in the early versions, which are presently in the hands of some Australian users. Future upgrades will no doubt correct these initial difficulties. The compiler produces fast native 68000 code and has already been used to illustrate university teaching in Australia.

MacScheme from Semantic Microsystems is a more powerful and extensive implementation of Lisp on the Mac, and includes excellent debugging and multiwindowing facilities, as well as a byte-compiled code to be distributed as a unit without further licensing.

Summary

The Mac is already an excellent tool for expert systems development, and the range and power of the expert system tools available is adequate for substantial work. The trend to transport languages down from much larger systems to the Mac is well established.

This article has briefly covered the three major AI languages now available for the Mac, and has made no attempt to explain the differences and special features of the different languages themselves. The objective here has been to summarise the available language tools and how to find out more about them on the Mac. □

name
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; integer when
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(make goal ^na
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(write (crlf) | Ent
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(crlf) | 2:
(crlf) | 3:
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(crlf) | 5:
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lain
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(write (crlf) | I am
(defun unify (x y
(setq x (valu
(setq y (valu
(cond ((variab
((variable
((or (atom
(cond
(t
(t (setq n
(cond (t
(defun value (x y

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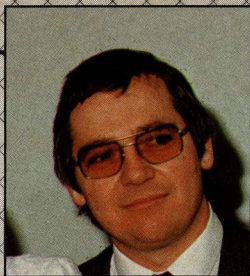
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BALL/MAC 0005



John Stachlewski

The Mac has always been associated with presentation quality graphics, but what about CAD/CAM? John Stachlewski has some advice for prospective purchasers of a Macintosh CAD/CAM system.

Almost all the photographs of Mac that I have seen have shown off the Mac's graphics capabilities in one way or another, and why not? The Mac is a graphics machine and its capabilities in this field are extensive, with both bit map and object-oriented systems. So, bearing this in mind, it may seem somewhat ironic that CAD/CAM should be one of the more recent areas of Macintosh software development.

However, until recently, drafting software for the Macintosh has been

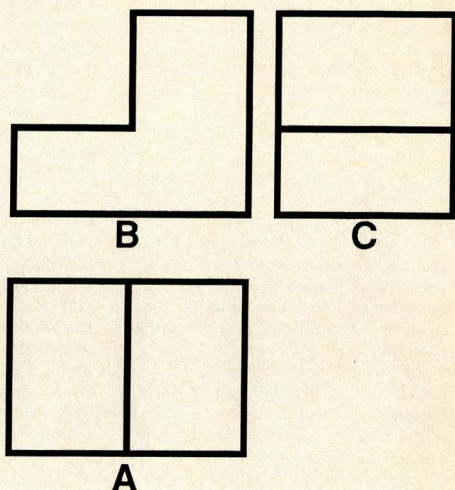
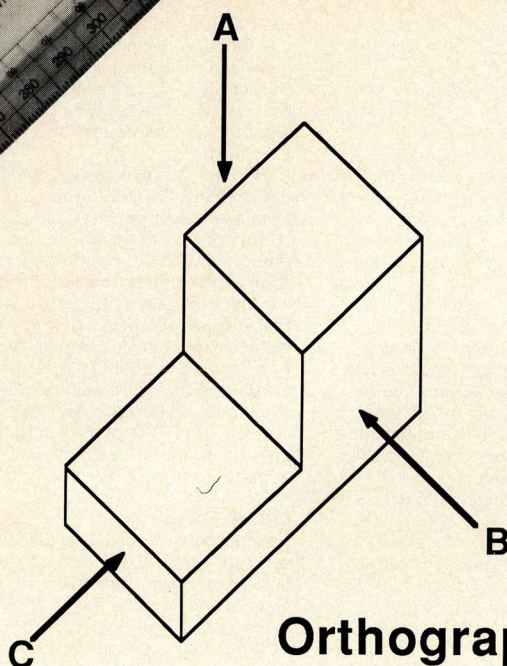
limited by the use of grids to measure distances. While this system was fine for two-dimension drawing, it lacked the accuracy and sophistication of drafting systems in the big blue world of IBM.

At the time, the de facto standard for drawing and drafting packages was MacDraft, which had a variety of powerful features but lacked accuracy and the facility for numeric data entry with the keyboard.

About two or three months after the release of the 512K-byte Mac, a second wave of CAD/CAM software started emerging offering keyboard entry to obtain accurate renditions of lines, circles and other objects. These packages also offered two new systems of entering and manipulating data on screen with the use of the X, Y co-ordinate system (where X represents width and Y represents height). This at last gave the Macintosh some credence in the esoteric realms of CAD/CAM applications.

Other programs were released when the MacPlus appeared. It

An object-ive



Orthographic Representation

provided greater control and added new features which extended the X, Y co-ordinate system further and added a Z axis. This system of construction, known as the Cartesian Co-ordinate System, allows not only two-dimensional objects to be constructed along the X, Y axes but also allows information related to the depth of the object to be entered (Z represents depth). The introduction of this system allowed three-dimensional modelling to be realised on the Macintosh.

This had the major advantage of introducing orthogonal lines which gave the user the ability to construct both 2D and 3D shapes in space with the ability to rotate the object and view it from a number of angles. This was obviously a major development.

The introduction of orthographic drawing provides the designer with a means of communicating easily with people in the manufacturing sector. It also provides a method of verifying the drawing by projecting lines from one view to another. Using these techniques one can get an idea what the finished product will look like from various angles. It

is important to take this feature into account when deciding which type of software to buy.

Another important consideration is the ability to construct Isometric drawing. This form of drawing is also a standard accepted around the world, and it gives as much information as possible about a three-dimensional object as is possible on a two-dimensional plane.

However, if placed on paper the

point of view

Getting Started

object cannot be rotated nor can it be seen from the top or bottom unless there is a manual re-draw of the sketch. This is where the computer system allows not only construction using accepted conventions, but allows analysis of objects once they are constructed. Traditional techniques do not allow that unless a great deal of time is spent on the drawing board.

Along with this emergence of comprehensive CAD and modelling systems we had further refinements in order to help the design process. Polar Grids were introduced to once again allow fine control over the way data is placed and plotted on the screen. The Polar system describes a point by an angle and distance.

All these features can now be found on various Macintosh packages, heralding the Macintosh as a true CAD workstation at a fraction of the cost of conventional computer systems which are now available, including systems running on the IBM PCs.

State of the art

More recently, developments include the ability to layer information (up to 256 layers deep). Layering refers to the ability to construct various elements of a drawing on different planes or layers. This has the advantage of keeping an orderly working environment.

An example of layering is where you may want to construct a house plan. On one layer you might have the outline, on another the dimensions and on another the details of the contents such as furniture, wiring and so on. When completed the layers can then be combined and printed on a LaserWriter or plotter. Applications where this feature could be useful include PCB layout and design, landscaping, and architectural drawing.

Other areas which are also extremely important include the ability to interchange data between the Macintosh and mainframe systems. The Macintosh now has that

ability and a de facto standard for this function is emerging within the industry in the form of the Initial Graphics Exchange Specification. The standard is already operative on a number of mainframes and the Macintosh.

This development was long overdue and hampered the Macintosh from penetrating various sectors of both government and corporate use. You now have the ability to use a Macintosh with up to 4M-bytes of RAM as the initial design too. If more complicated work needs to be carried out, it can then be ported to a mainframe for further enhancement and modelling. The Macintosh is already powerful as a standalone CAD/CAM system, and by combining this with mainframe communications, it is outstanding.

Other Software

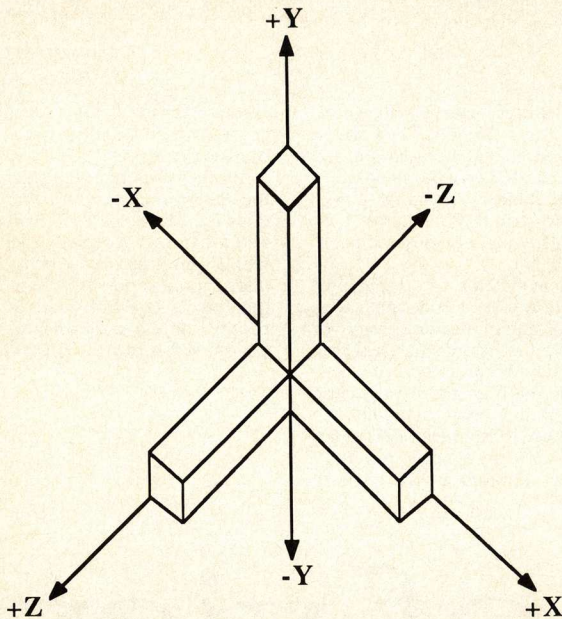
An important Australian piece of software that will be released shortly is called CFrame, written by Crystal Graphics in Western Australia. With it loads, stress points and a variety of other functions can be performed to allow complete analysis to take place on engineering plans. In conjunction with other programs this allows complete control from initial design through to final production of working drawings and beyond.

Other programs exist which are of a more general nature yet with some interesting attributes. Programs such as Mac 3D Version 1.1 offer modelling capabilities and three-dimensional rotation, measurement and so on.

MacSpace and Easy 3D are yet other programs which can be used in pre-visualising structures before finished drawings are produced or even contemplated. If you wish to start on the low end, this would be a good way to start, then you can progress into the more advanced packages.

There are also CAD packages for other applications which tend to be more specialised. One of the most interesting ones is called Quick Circuit from Bishop Graphics, which is used for the construction of PCB Layouts.

While I am not an expert on PCB design and layout, this program has



Cartesian Coordinate System

a number of features that will allow the production of various boards for a variety of machines. It appears to be yet another program that might not be distributed in Australia, but which would probably attract a significant market. Perhaps we can find out who is distributing this software through this issue.

Features available include panning facilities, various pad, line and other libraries. You also have the ability to superimpose layers and look at solder or component sides or both sides at the same time. The zoom functions are excellent, with a number of ratios available allowing you to look at the drawing in some detail.

Microcomputer boom

Dataquest in the US recently surveyed the implementation of CAD workstations and the forecast growth in the microcomputer area as opposed to standalone workstations. The survey said that while the host dependent workstation (connected to a mainframe) will taper off between 1986 and 1989, the standalone and microcomputer markets look certain to boom, with a marked increase in the micro market.

What does all this mean to you? While the implementation of a microcomputer CAD workstation sounds exciting, there are a number of pitfalls to be wary of. Most importantly, automating the drawing

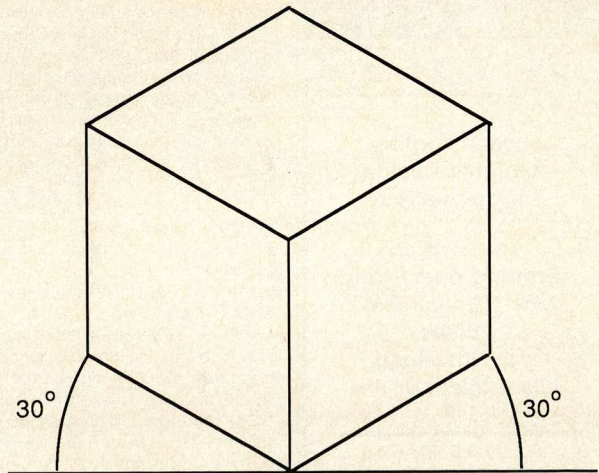
process is a long term strategy. This stems from the fact that a learning curve is required, which in turn represents a substantial investment in both personnel and time.

It often means that the advantages of automating may not be evident for the first two or three months, but the long-term benefits can be astounding. Since you will be working on and saving electronic data, libraries can be built up over a period of time, allowing you to use components in multiple drawings without having to re-invent the

wheel or in this case re-draw the components being used.

As an example of this effect, the flexibility of an electronic system is only starting to be realised in the desktop publishing field. The ability to electronically cut and paste data between various drawings, the ability to incorporate text, rotate objects at specific angles (including text), zoom into section and so on, are all part of what you will encounter if you take the step into electronic drafting.

This is perhaps one of the four major advantages of setting up a



Isometric Projection

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come three brand new MacUser products. MacCalc ... a beginners spreadsheet. Super crunch ... a talking spreadsheet. Interlace a powerful database ... the list goes on. All are now available from DBMS/WORKWARE, an established marketer of IBM software who

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Hire the packages which interest you from the **Software Library** - a fast-expanding collection of software for hire at reasonable rates. Most of the software developed for the Mac is good, some is excellent, but you don't know if it suits your purpose until you sit down and use it for a couple of weeks.

A mistaken buying decision can result in: the loss of the value of the software, the valuable hours you spend in frustration, the hours needed to learn another program.

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Getting Started

microcomputer CAD operation. Other advantages relate to the easy editing of drawings, allowing quick changes to be made without the need to re-draw parts of complete drawings. The converse is also true in that you may only want small sections to be plotted out, rather than complete drawings.

If a client wants a window or doorway moved it is a simple matter of clicking on the items that need to be moved and then re-positioning those items at the location specified by the client. This "What If" capability is yet another advantage of an electronic system and when compared directly against the traditional drawing routines makes them redundant. The only problems that can be expected are those of reluctance on behalf of a number of individuals who are so entrenched in their current procedures and have a fear of computerisation. For this reason Macintosh represents an ideal choice because of its user friendly environment and consistent approach in terms of interface no matter what the application.

Computer Assisted Design and Drafting

The CADD market can be split into six distinct areas — each of which requires different solutions. The large office requires CADD stations for each desk. This also implies that the software must have the ability to use a database which is compatible with a centralised mainframe. The medium office will almost certainly require networking solutions and large amounts of hard disk storage to make the solution a cost-efficient one.

The architectural and interior design area is marginally computerised and will require extra training and support. It is envisaged that this environment would require standalone or microcomputer workstations. Three-dimensional perspective, rendering and titling are other requirements that need to be

considered when purchasing hardware and software.

The graphic design studio is similar to that of the architectural area. However, both three-dimensional modelling and desktop publishing solutions are required. Color and solids modelling (with film and video output) is yet another area required by this group of people.

The government sector also benefits from having low-cost desktop publishing, color design and solid modelling capabilities. This also applies to the educational sector.

Summary

As you can see, there are a number of programs which can help you in your day to day activities. A point that I would like to make is that you first outline those activities and then plan for the implementation in conjunction with your dealer. This is a crucial factor in ensuring the correct decisions are made.

Also, find a dealer that has the expertise and backup needed to provide sufficient support. An implementation schedule should be asked for and be included as part of the package. This is another important point that many individuals and organisations tend to neglect. Solutions are provided by various companies that have invested a substantial amount of time and money in building up expertise and backup.

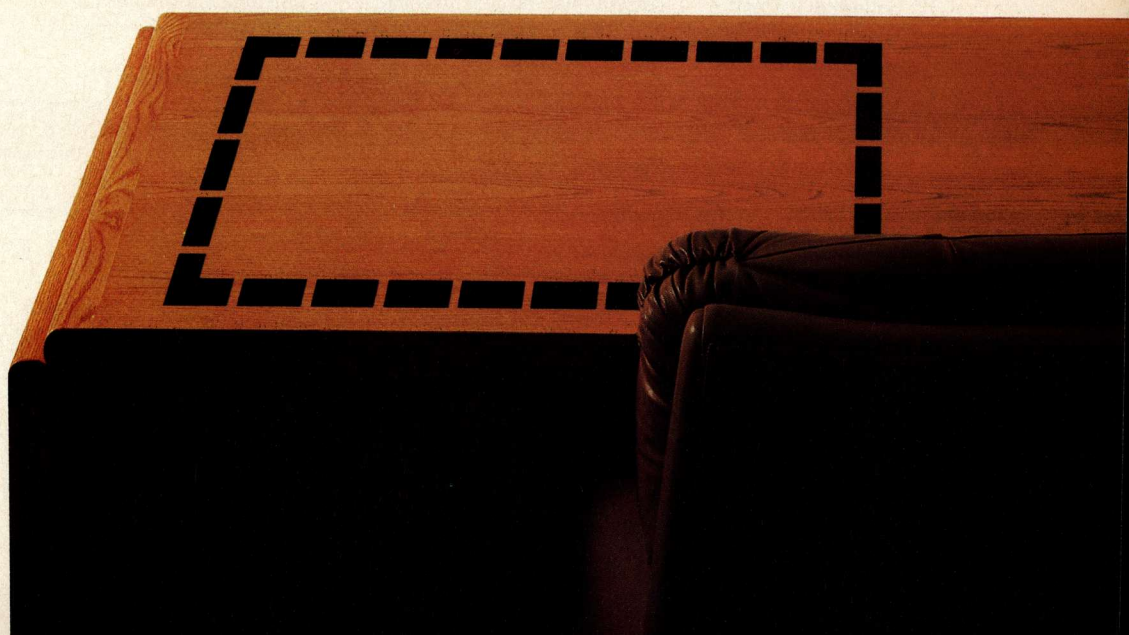
However, the supermarket approach adopted by many dealers prevents that level of expertise being made available to you. This has been getting steadily worse, so be wary when you are sold a solution.

As a general guideline, software should be your *first* consideration and the hardware and peripherals should be matched with the requirements of the application you have selected. Have the system demonstrated if necessary, and if you are not satisfied go elsewhere — you will save yourself and your company a lot of time and heartache, and quite possibly, money too.

If you follow these steps you should find that everything will be smooth sailing.

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And you'll save money, because of all the monstrous type bills you won't be paying.

Desktop Publishing Plus

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ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz	ITC Bookman
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we've ever built. Its Motorola 68000 microprocessor and full megabyte of memory allow you to run powerful graphic and page design software programs. As well as powerful word processing, spreadsheet, database, and other business programs.

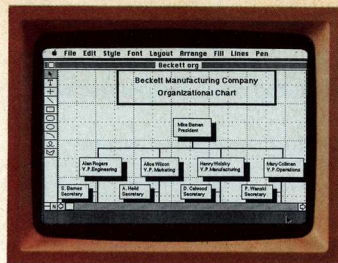
And its point-and-click mouse technology makes it easier to use than Letraset. So you can spend more time doing work instead of learning how to get the computer to work.

The LaserWriter Plus printer has the same 68000 microprocessor that's in the Macintosh Plus. Not to mention a hefty 1.5 megabyte of memory and a megabyte of ROM.

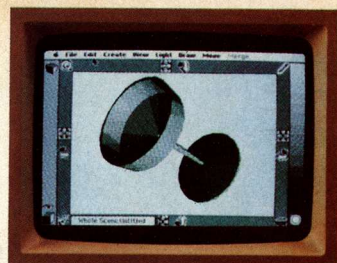
And inside its ROM is POSTSCRIPT, the page description language that is quickly becoming the industry standard.

Translated, this means the LaserWriter Plus can cover an entire page with virtually any combination of near typeset quality text and high resolution graphics.

POSTSCRIPT also allows the LaserWriter Plus to generate dozens



MacDraw from Apple



Easy 3D from Enabling Technologies



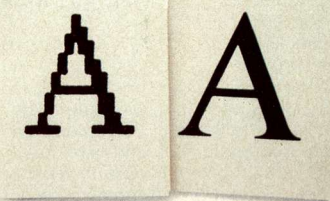
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Zapf Dingbats, Courier and Symbol. And more families are becoming available all the time.



The crisp looking "A" was done on a LaserWriter Plus. The fuzzy one was done on a standard dot matrix printer.

These were produced with nothing more than a Macintosh Plus, a LaserWriter Plus, and software like Aldus' PageMaker, Microsoft's Word and Excel, and our own MacDraw and MacPaint.

All of which means, you can now generate professional quality manuals, reports, presentations and overheads faster than you can say "you can now generate professional quality manuals, reports, presentations and overheads."

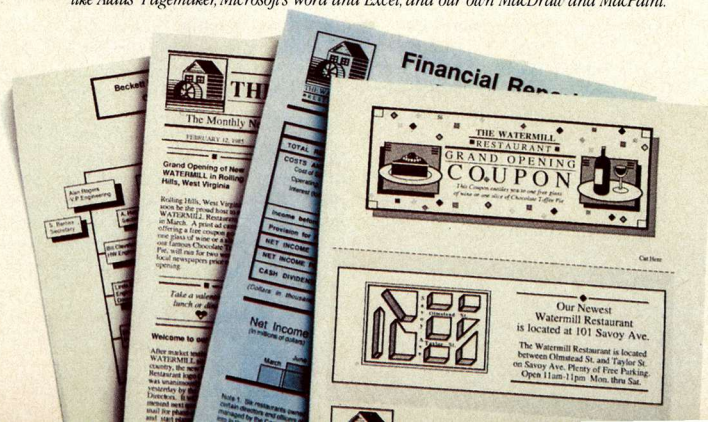
And if you decide you need commercial typeset quality printing, the Macintosh Plus can easily hook up to larger POSTSCRIPT compatible typesetting machines like a Linotype Linotronic 100 or 300.

So visit your authorised Apple dealer.

And start making plans to build a design studio, a type house and a print shop on your desk.

But don't expect to have a ground-breaking ceremony in your office.

Just expect to break some new ground in it.



Edited by Neville Angove

Crashing Conundrums

Q I already know that a number of the older Microsoft and Hayden products (namely Word, File and MusicWorks) that I use, crash because of the new Mac filing system. Are there any other major pieces of software that crash other than utilities which are notorious for incompatibility crisis? Which of the file editors, like MacTools 4.2, FEdit 3.0 and MacZap do not crash HFS on the Mac Plus?

Andrew Lovegrove, Perth WA

A The root cause of application crashes under the Hierarchical Filing System (HFS) is a matter of conjecture. Apple claims that the crashes are because software developers do not follow the company's guidelines, and major software houses such as Hayden have admitted this. Microsoft's products, for example, never worked as expected under the Macintosh Filing System (MFS), but did not crash as much.

Many programs — and most utilities — bypassed some of the Mac firmware, and so will not work properly with HFS. Most versions released since the Mac Plus was announced work satisfactorily.

In spite of Apple's protestations, all aspects of HFS have been often revised (which is a nice way of saying that Apple has had a little trouble finding all the bugs) since the original launch. The System is now at version 3.2, while the Finder is now at version 5.3. And no one knows how many ROM revisions have been done. Programs written to the guidelines provided by Apple will not necessarily work, since the guidelines seem to be wrong (that is, Apple's software and firmware do not completely

support them), which means that all Mac software is technically incompatible with HFS.

Paradoxically, all major software now claims to be Mac Plus/HFS compatible, but there are a few doubts. Jazz, revised for HFS, is still suspect (and the original version definitely will not work properly with HFS), and unless a program or utility claims MacPlus compatibility, it will probably not work.

Painting UP

Q In the April/May issue of *Australian Macworld* I noticed that there was an advertisement by Understanding Macintosh about a new product of which I have never heard. Its name was FullPaint and was supposedly the 512K-byte version of MacPaint. Is this program compatible with documents created with MacPaint versions 1.4 and 1.5 or only version 1.5? Is this program an official upgrade that Apple has offered to all the 512K-byte and 1024K-byte Mac owners?

Will this program add many features to the existing versions of MacPaint or does it just allow you to have more than one window open? How can the people with 512K-byte Macs upgrade their older versions of MacPaint and know that their old pictures will still be openable with the new program? Andrew Lovegrove, Perth WA

A FullPaint, from Ann Arbor Softworks, and distributed by Infomagic Australia, is not an Apple product. It is a

graphics/art program based on MacPaint but offering some interesting extra features: full screen pictures, scrolling, 300-dots/in FatBits mode (perfect for LaserWriter), multiple windows, and the four ClickArt effects (Rotate, Distort, Skew and Perspective).

It offers everything MacPaint offers as well, and will work with any MacPaint file created by any version of MacPaint.

FullPaint is definitely not an Apple upgrade, and since it is actually cheaper than MacPaint (now that you have to buy MacPaint for \$175 when you buy a Mac) while offering every MacPaint feature, it is the logical choice if you want a paint program.

Upgrade Ambiguity

Q During the month past, I have been involved in projects that require the use of programs such as ReadySetGo, Pagemaker, Overvue and Word, and have struck problems that I wish to solve by upgrading and adding an external drive.

The article in *Australian Macworld* (December/January) leaves me with the impression that an upgrade to the 128K-byte ROMs, together with the addition of an 800K-byte external disk drive, is the most sensible way for me to go, and with this action in mind I approached an Apple dealer for advice and pricing.

The recommendation was to go to the ROM upgrade and the 800K-byte internal drive, leaving me considerably out of pocket, and still needing the flexibility of the external drive. The dealer did not merely recommend, but rather told me that the upgrade he suggested was the only one available from Apple. Could you please confirm the details in the article?

Philip Boswell, Willetton WA.

A The upgrades to Mac Plus are, in order of cost:

- ☐ ROM upgrade and 800K-byte external disk drive;
- ☐ ROM upgrade, new logic board, new back case and connectors;
- ☐ ROM upgrade, board, case, connectors, and internal drive.

With all these upgrades, the new keyboard is an optional extra. This information was given to *Australian Macworld* by Peter Sandys, product manager at Apple, at the time of the MacPlus launch, and has not been contra-indicated since.

With Apple now standardising on the 512K-byte/800K-byte Mac as the entry-level machine, there could be some push to get rid of all 400K-byte internal drives. Your dealer's confusion could have been caused by a problem with the supply of upgrade parts from Apple.

Pointless Printing

Q In December last year I bought a 512K-byte Mac and an ImageWriter II. Things seemed set for me until I discovered that the printer was not always printing what I wanted it to. If I tried printing a MacWrite document, after selecting "OK" from the print menu, the printer occasionally cranked and printed a whole series of two-digit numbers. This does not happen all the time though, but has wasted a great amount of printer paper. Why is this happening and how can I avoid it?

TC Chan, Dalkeith WA

A The numbers you all have digits in the range of 0 to 9. If any were actually letters in the range A to F, I would say you scored a hexadecimal printer dump — which is probably what you have scored anyway. You have a printer hardware problem, and only Apple can fix it — by repairing the printer.

Copying With Copying

Q I have had a lot of trouble with a number of programs and disks copying the System files. The computer takes a long time to copy the system file, with the typical trouble signs of a recurring catch on the disk, this catch being a groan followed shortly by the same noise.

One of the files that is always missed when I try to copy is version 4.1 of the Finder. The Mac comes up with the message, always including the horrible signs of a crash, saying, "Sorry, there are some files in the system that had to be skipped." The problem with this inconsistent copying occurs with ClickArt Effects on a Sony disk and Hitch-Hiker's also on a Sony disk. How can I place the Finder on the disk to make it a start-up disk, and what can be done about rectifying this problem so it does not occur again?

Andrew Lovegrove, Perth WA

A I have had the same copying problem several times, but it has not been consistent enough to determine a single specific cause. But there are a number of reasons why copying the System files and Finder may not always be successful.

For a start, copy-protected programs such as Hitch-Hiker's will not copy properly using the Finder, and do not need a Finder, since this is actually built into most games, making them start-up disks anyway.

As the version number of the system and Finder increase, so too does the amount of disk space required, meaning that if you try to make new versions of these over-write older versions, there may not be enough space on the target disk. In any event, copying disks which are close to full sometimes causes problems

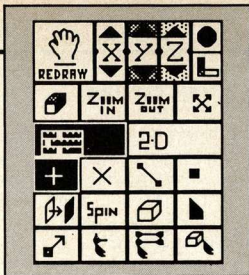
if you are using a later version of the Finder than was used to originally copy those disks because of differences in the way the Finder lays down the files on the disk.

Usually, the Finder and System files are the first files on a disk, and so are on the outermost tracks. If there are any problems with a disk's performance, they normally occur on the innermost and outermost tracks, affecting the copying of the Finder and System files. This may be what is happening with your ClickArt Effects disk, since nothing else makes particular sense (the best way to copy this is to instal the effects first, then copy the new disk).

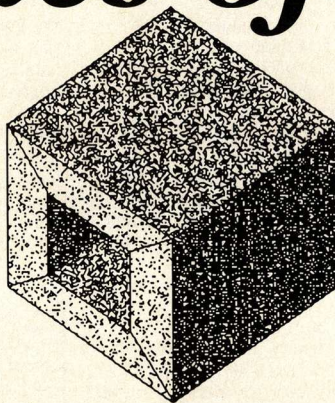
Other problems with copying Mac disks are due to copy protection schemes which do weird and wonderful things designed to convince the Finder that necessary files are damaged and cannot be copied, or hide necessary files so the Finder cannot find and copy them.

Finally, HFS prefers shorter file names to MFS, and this will cause some data files not to be copied correctly.

G et Info answers questions about the Macintosh and how it works. Most enquiries deal with application programs, but no topic is too elementary or too advanced. Discussions range from setting up the Mac to programming in Basic and Pascal. When you need advice about using the Mac, drop Australian Macworld a line. We cannot respond to individual letters, but will answer the most representative questions. ☐



CAD/CAM *Comes of Age*



One may well speculate about why it has taken so long for programs to emerge in this, one would expect, natural graphics environment of the Macintosh. A number of reasons are given by various vendors of software, ranging from the learning curve involved with the Macintosh user interface through to memory constraints and the very specialised nature of the product.

So until now engineering architectural and drafting areas have

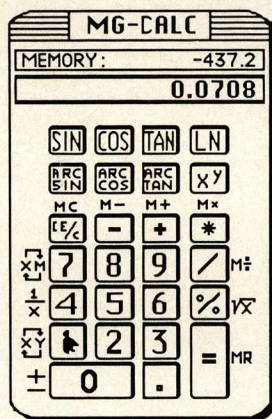
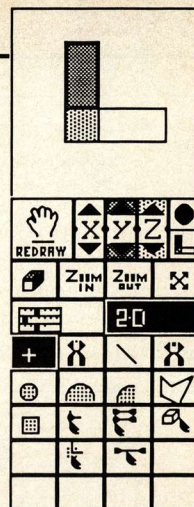
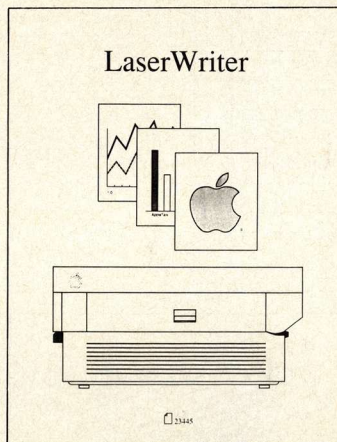
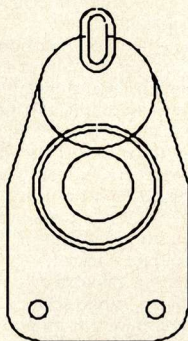
had to deal with products which are essentially drawing packages. While programs such as MacDraw and MacDraft have a great deal to offer in terms of non-specific drawing, they lack the sophistication of true CAD/CAM systems.

Perhaps the most distinguishing feature of CAD packages is in their ability to give accurate (in some cases up to several decimal points) measurements in either Orthographic or Isometric drawings.

Have you ever tried accurately to

draw a line which may equal 1.23 millimetres in MacDraw or MacDraft? There is no easy solution to this, because there is no facility for keyboard entry of numeric data to ensure accurate line drawings. Other features relate to the ability to have multiple layers of information which can be turned on or off, thereby allowing a clean working environment without unnecessary detail getting in the way, until the final plot is ready to be executed.

Plotting is yet another feature



The latest Mac software craze is CAD/CAM, and little wonder when you consider that the Mac is perfect for such an application. But what of the software? Does it measure up to IBM drafting packages? Is there one package better than another? John Stachlewski takes a look.

which is not incorporated in MacDraw or MacDraft. It is supported by third party software, which introduces yet another step in the production of a final drawing, whether it be an Isometric, plan front, side elevation or a combination of all views.

Unfortunately with the new generation of CAD software there is a proportional increase in the learning curve, and furthermore some of the packages contain a wealth of sub-menus and this also

increases the learning curve. This means that dealer support becomes critical.

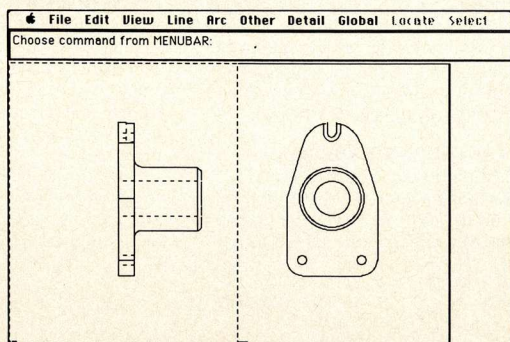
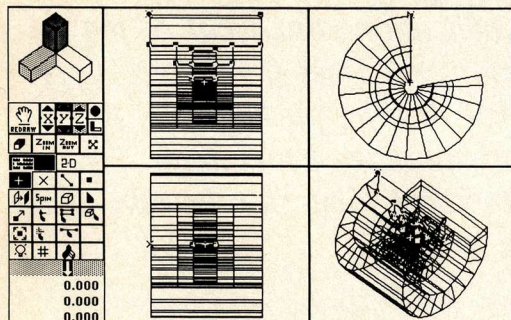
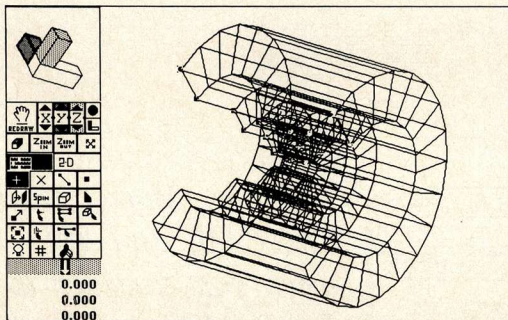
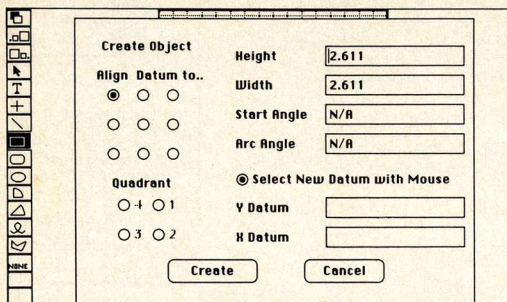
The products we are going to look at are not products that should be bought at computer "supermarkets" but ones that require a high degree of support and familiarisation.

MiniCad 2-3D Designer

MiniCad is a product which has developed quite a considerable amount of power over the past year and yet remains one of the most

underestimated packages now available in Australia. Since the release of version 1.00 enhancements have been made to the product on a regular basis and, although some of the changes have been cosmetic, some of these have related directly to the interface and the various modes available from within the program.

I use the word modes because MiniCad actually combines three into one package. These modes are: 3D modelling; 2D manipulation of the



3D graphics constructed; and a 2D editor. As well as this, the program can produce either wire mesh or solid model drawings. For the price there is very little that approaches this product in terms of features and capabilities.

When you first boot into the program you are placed in the three-dimensional drawing mode. From here a number of primitives are available which allow you to construct and merge various objects with great precision. In fact, when you construct a primitive (from a range of 36) you are asked for the height, width and depth of the object that you are constructing. Measurements can be calculated to nine decimal places, while scales can be determined from a menu which includes both imperial and metric rulers.

You can view an object from the top, front, side or as an Isometric drawing by simply clicking on the top menu bar of displaying the four views using the mouse and selecting the menu or using the command key in conjunction with F.

This adherence to the Macintosh interface through the whole program reflects the thought and time that has gone into the package. I have seen the icons on the menu selection boxes change a number of times, all in a bid to make life easier for the enduser and to cut down as much as possible the time on the learning curve required with such programs.

If you decide that you want to work on a particular view you simply click on one of the four windows and it automatically reappears on screen. Changes between views is quick and efficient, allowing visual "What Ifs" to take place in real time. This places in the hands of architects, draftsmen and engineers a very powerful tool for modelling before actual completion of design and manufacturing, which this program at present does not support.

MiniCad cannot be hooked up to an electronic lathe and data cannot be sent directly from the program to

construct the particular object that has been produced within the CAD package, but then again the package is selling for only \$925.00.

Apart from the fact that you can manipulate visuals with a great degree of control and rotate objects around the X, Y or Z axes by simply

choosing the light globe from the menu. Objects can also be cloned or duplicated using the same menu. Other features allow selective shading of the polygon structures contained within the program, the ability to delete selected points, and an infinite zoom in and zoom out

3D and 2D construction on the Macintosh.

I strongly urge you to try this program out by visiting a reputable dealer who knows what he is talking about. Demonstration diskettes should be available from your dealer on request along with a sample tutorial that will allow you to explore various aspects that have been covered in this overview and areas which have not been covered.

“All measurements (to the scale chosen) are displayed on the screen below, thereby allowing accurate placing of individual or grouped parts.”

clicking on the menu bar, the other outstanding feature of this program is the shading algorithms built into it.

If you do not want a wire mesh you simply choose the method of shading required, whether it be grey levels or dithered patterns. After this is accomplished all you do is simply click on the box and it will automatically give you hidden line removal in the mode selected. If you choose dither pattern and the objects that you are working with are complex, it can take quite a while for the algorithm to complete its work. Nonetheless, in terms of solids modelling with accuracy, it is one of the nicest routines I have come across.

Not only can you construct objects in a three-dimensional environment but you can then transfer to the 2D manipulator (my own description) and change various points (with a pair of pliers of all things) add lines, circles and a variety of other manipulative features which reside within the 2D manipulator.

Full zooming functions are supported, as is the ability to edit polygon structures and vertices from both the 2D and 3D sections of the program. The editing procedures can be accompanied either by using the mouse or by entering numerical data from the pull down menus.

The 3D editor allows customised lighting which can be obtained by

feature which is quite simple to use. To achieve a zoom all you do is to drag a rectangular section on the part of the drawing that you want to zoom in or out of.

The last section that this program has to offer is a 2D editor with features such as layering (up to twelve levels) dimensioning, scaling, zooming and so on. Clicking on the top left hand icon causes a hand to be displayed so that the drawing can be moved around on screen — shades of FullPaint, or the redundant MacPaint!

Layering allows you to have sections of drawings one underneath the other, allowing only those sections that you want to work on to be highlighted while other layers are dimmed. It is simply a matter of pulling down the menu bar and selecting the layer that you wish to work on. This allows an orderly working environment.

All measurements (to the scale chosen) are displayed on the screen below, thereby allowing accurate placing of individual or grouped parts. One of the other features that stands out is the ability to double click on one of the icons and enter information for the construction of a line or circle to specific measurements. This feature has been long overdue and is a major breakthrough in terms of accurate

MiniCad summary

One of MiniCad's nicer features is its ability to create a number of primitive from a pull down menu which can then be used to construct complex objects. The program also allows you to determine a vanishing point within the drawing, and then, by moving that drawing, alter the perspective. Perhaps one of the most important functions is the ability to read and write text files for the storage and re-construction of an

Mac-Rent

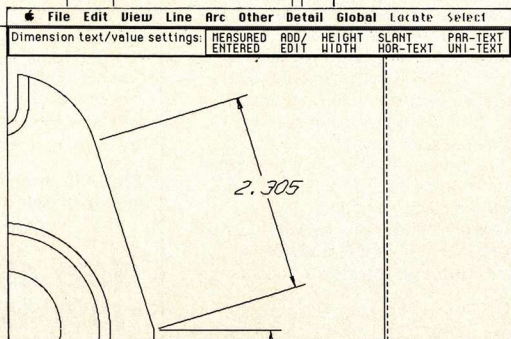
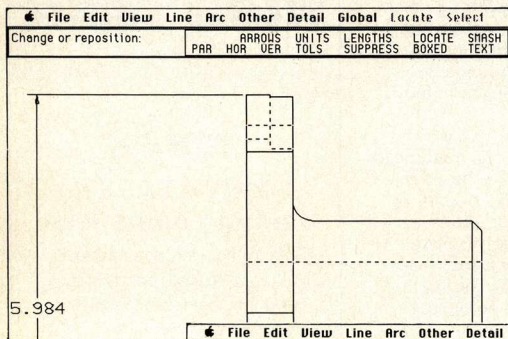
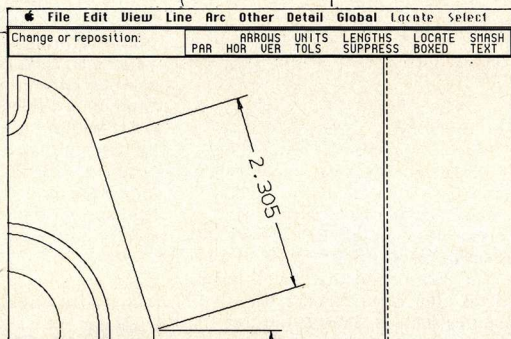
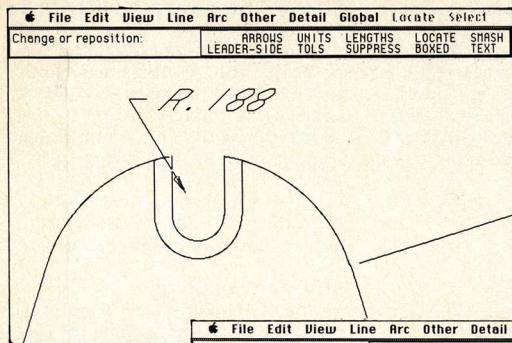


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object created in Minicad 3D, a text editor, MacWrite and Microsoft Word text only files.

This has important implications for programs now operating on IBM which use text to store data. As yet there is no common standard for the transferral of data between various machines, but version 1.2 of MiniCad may remedy this.

One can only hope that some common standard is adopted in this area so that a free flow of visual material can occur. After all, if I can take data from a Tektronix 4015 and paste into MacDraft or MacDraw, what is stopping programmers from developing software further to communicate intelligently with other machines?

Perhaps the one feature that would be useful is the incorporation of a visual database, used to store elements or sections that may be used repeatedly during the course of a working drawing, and this feature is available on the next package which we will look at.

Micro Graphic Work Station

This program is perhaps one of the most enjoyable to work with and while it does not contain a wealth of special purpose menus it would be most suitable for draftspeople that require only 2D line work. It also uses one of the anti-piracy devices that plug into the back of the computer. (I wonder how Copy II Mac will overcome this one?)

Unfortunately, I was not given access to a working version of the program and only a demonstration copy was provided for review. This copy of the software allows you to construct various objects, but does not allow you to save print or plot.

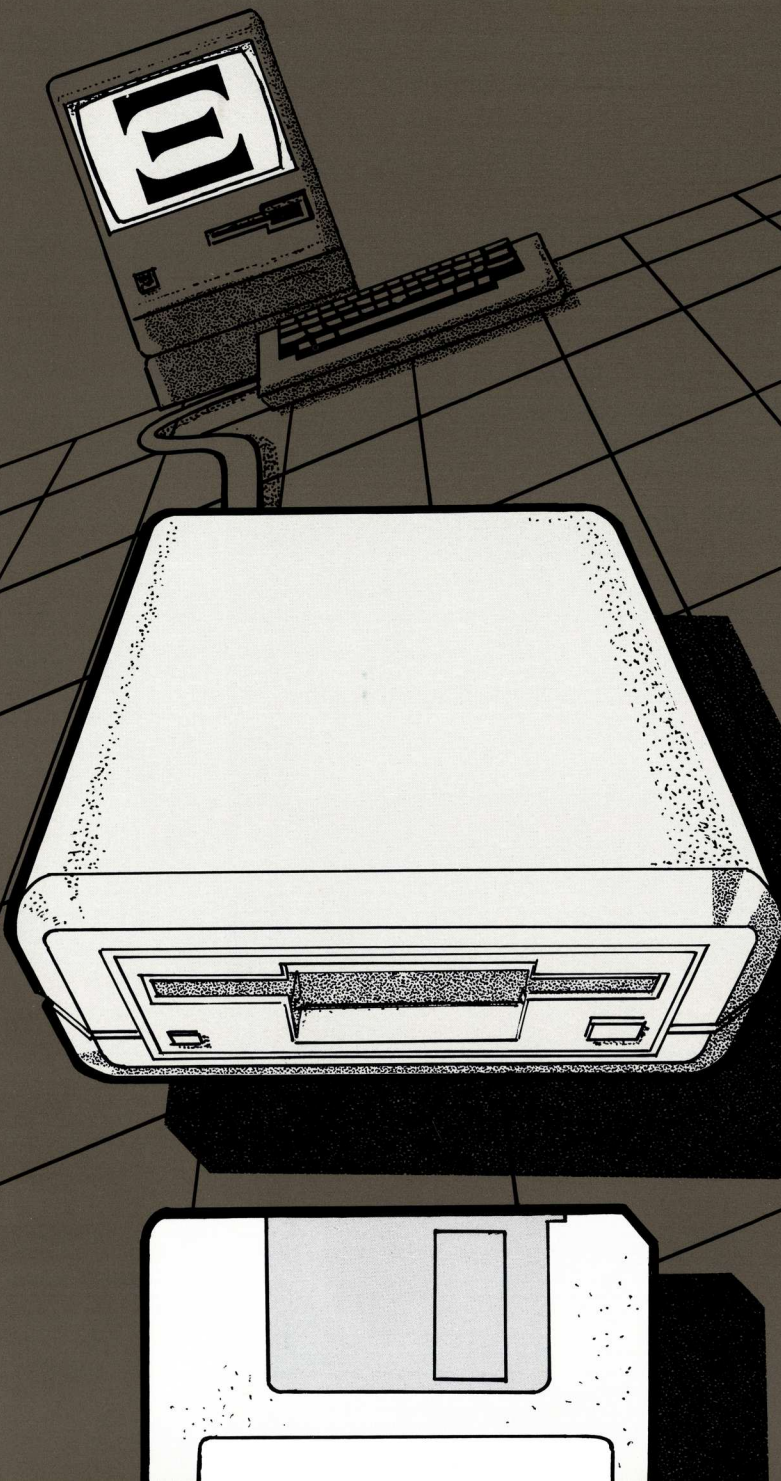
As distinct from MiniCad 2D-3D Designer this package, which apparently is one of a suite of modules, does not contain a 3D editor. Nor does it purport to handle 3D work.

The tutorial that accompanies this program is probably the best of those that I have looked at. It is concise and well laid out, and leaves very little room for error or misunderstanding. I wish other programs were as well documented as this one.

This program itself is straightforward, with a set of icons

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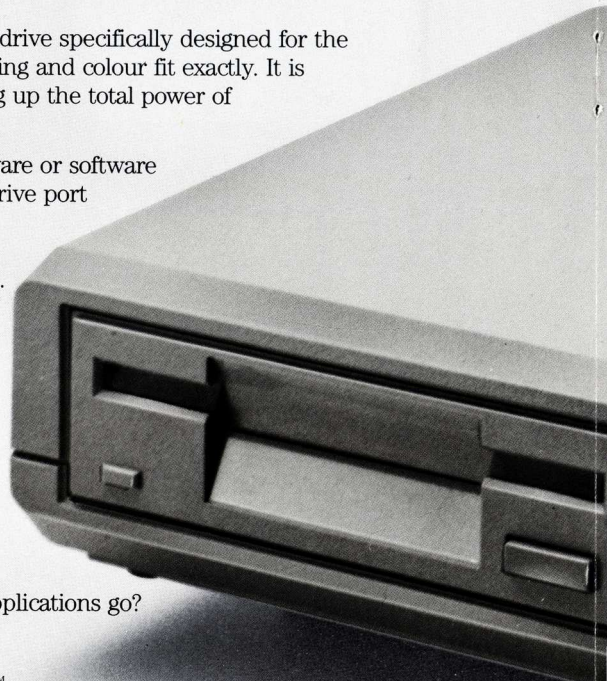
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placed along the right hand side of the page and menus which allow you to control elements such as positioning of points, lines, the constructions of Fillets, dimensioning, and so on. The main menu bar also allows a variety of controls over placement of objects and individual elements.

It is also the only program that allows the development and storage of graphic libraries. This feature is a powerful one that could be used to store frequently used and manipulated shapes or objects such as windows, doors and so on. Libraries could quite easily be created for specialist areas such as electronics, engineering and general drafting requirements.

To start using MGWS, you start by setting up a grid, the specifications of which are entered with the keyboard. Quite complex grids can be constructed and used in a variety of applications, but if you wish you can use the package's built-in polar grid.

After the grid has been set up you are ready to start establishing your points. This can be done either with the mouse or by choosing the Absolute Points command from the menu bar. If that last step is used, numerical data must be used to designate the X and Y co-ordinates. After all your co-ordinate points have been entered you then start placing lines between points which is once again accessed through the line menu. The speed at which you can work within the program after 10 minutes surprised even me.

After all your points have been linked the real strength of the program shows through. Fillets are extremely hard to perform in either MacDraw or MacDraft, but in this program it is a simple matter of choosing Fillet all corners from a menu and the transformation takes place. It is extremely easy to do and the results are certainly accurate.

If a Fillet needs to be changed it is a simple matter of choosing Two Lines Fillet, clicking on the outside of the section that needs to be

changed and then entering the new radius.

Unfortunately, with this program the screen needs to be updated manually with the commands called Organise Data and Repaint Drawing. What this apparently does is allow you to conserve memory by compressing and re-drawing the file. However, it does not take long and allows any changes made in edit mode to be recorded.

The program remains in a particular mode (whether that be adding lines between existing points or deleting sections of drawings) until you change by simply dragging the mouse over to the left icon menu bar. This is a useful feature because it allows the construction of multiple objects without having to use a menu.

One of the more interesting aspects of this program is the way that you operate. Instead of picking a haphazard approach to your drawing such as constructing a freehand polygon starting at any point, you must start constructing it in an anti-clockwise direction. You have to specify the starting point and so forth, but if you do not follow the rule you will have problems with your drawing at a later stage. This took a little getting used to, but after about ten minutes and a number of mistakes I was off and running.

While no layering exists within this particular module, the use of the graphic libraries certainly makes up for some of the disadvantages. As the libraries are visual ones and not just text descriptions, working with them is easy. Once a library item has been constructed its scale can be changed and edited further and then it can be pasted back into the master drawing.

One of the more unusual features in this program is the mouse-operated zoom. As opposed to MacDraw or MacDraft, where the mouse is clicked at any position and then dragged to choose multiple or individual items, in MGWS you must start at the lower left of the section and then drag diagonally until all the items that you want to work with are selected. Once again it does not follow what has existed in the past,

but with a little practice you learn to live with the new rules.

Apart from all the other functions which are available within the program the most dynamic feature of this program is its ability to dimension drawings.

As with other parts of this program it is simply a matter of choosing the dimensioning routine (vertical, horizontal or other) and then clicking on the parts that you want dimensioned. This is where the program excels in its interface and ease of use. Prompting is always there, asking for confirmation or asking you to select the points that need to be dimensioned. Measurements can be bounded by boxes if required and dimensioning tolerances can also be placed within the drawing. This is an important feature for engineers who require a certain tolerance on a piece of machined metal to be placed along side the actual dimensions. In a case where there may be a tolerance of

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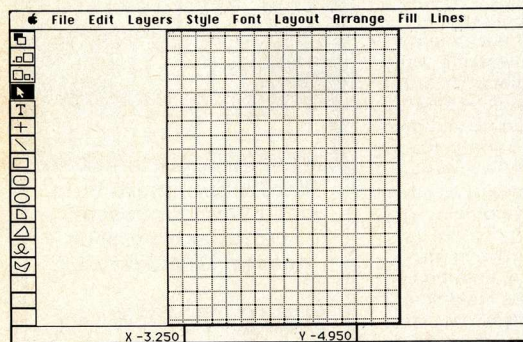
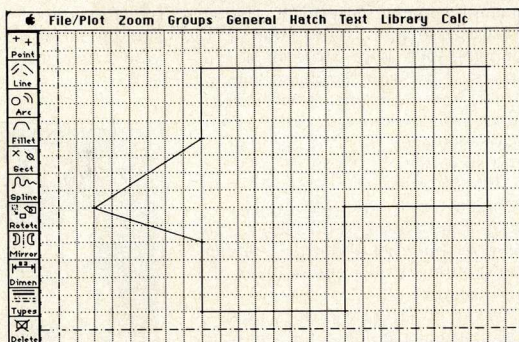
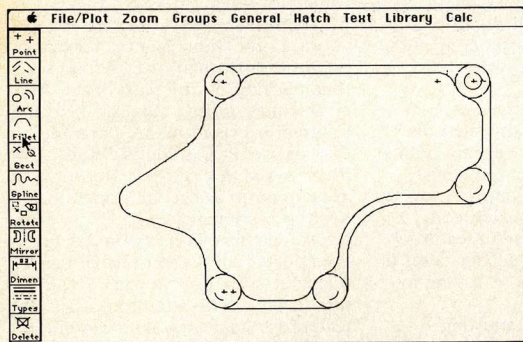
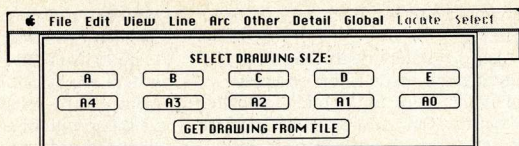
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+0.25 or -0.25 this can be placed within the drawing so that the machinist has all the details required before starting work.

While dimensioning is extremely easy to use, the one unfortunate aspect about this program, and a number of others, is the fact that they cannot rotate text to align with specific angles on the drawing. Line conventions within MGWS are adequate, but could be expanded once again to comply with standard conventions.

An interesting feature which is available while you are in the program is a fully fledged calculator enabling various tolerances and calculations to take place.

Slots, hexagons and a number of other engineering preferences are available from menus within the program, allowing for keyboard entry and thereby increasing the accuracy and production of scaled drawings. Hatching is yet another area supported by this program, with various angles available. The one important point here is that the manual states that if you use certain fill routines which are available the plotter driers that are built into the program might have problems coping with them. In order to obtain a correct plot you must use a conventional pattern which is also available from menu. This is one of the contradictions within the program, and one that I would like to see go. As mentioned, plotters are supported.

Of all the programs that I have looked at this one specifically gives wiring information for the 512K-byte Mac, MacPlus and Mac XL. Not only is wiring covered, but dip switch settings are also available, showing the concern the authors have shown in preparing the documentation.

Micro Graphic Work Station summary

This program is a most useful one, but the question you need to ask yourself is whether a straight 2D drawing program fulfils your needs.

EZ-Draft

EZ-Draft has more than 181 menu and sub-menu items. It is perhaps the most complete package for

engineering, architectural and drafting applications available in Australia today. One problem that I encountered when using this program was that installing the fonts on an HD20 caused FullPaint's menus to crash. At the time of writing the problem has still not been resolved.

A number of configurations are possible with this program, ranging from a MacPlus with a RAM disk, through to a 512K-byte machine with an external disk drive or hard disk. This can be set up by simply altering a supplied text file (Data Location) which acts as a link between the system and the various resources which accompany the program. This feature provides flexibility in configuration and use. The program also comes with a file called Iprep which is used to drive the laser printer.

This is not a program that can be learned overnight, nor is it a program that you would buy if you wanted a general drawing package. Once you start there are a number of procedures that you must follow before the actual drawing process. These include the setting up of your windows, the views (top, front, side or Isometric) and their origin. Once this has been done you can then start working with the program and exploring some of its possibilities by following the prompts which appear on screen and getting acquainted with the 181 plus commands available. Incidentally, an interesting point about this program is its nested sub-menus.

The program can also zoom from minute sections on an infinite basis using the mouse to designate the area that you want to work on. This allows quite accurate control over small detailed objects, and at the same time allows deletion of parts to be accomplished with a great deal of accuracy.

Dimensioning is yet another important function of this program and its power in this area has to be seen to be believed. This holds true for vertical sections horizontal, slanted or Filleted sections that you many want to dimension. The other

important factor is that the program adheres to the international standards for dimensioning and layout. This includes its fill routines for glass, lead, steel, plastic and other conventional materials which are used in manufacturing.

An important feature mentioned earlier is that this program allows you to have text parallel to a dimensioning line that you are labelling even if it is on an angle — no matter what the angle is. Other controls related to height, slant, and width give the draftperson a great deal of control which in the past just has not been available.

The ability to have multiple views on screen is a decided advantage, as is the ability to flip between them by simply setting your work view. The dimensioning powers are extremely important and are the crux of a good CAD package.

Other features include the ability to work in either Imperial or Metric measurements, the ability to designate grids of your own choice using keyboard entry or the mouse or a combination of both.

Editing abilities are extensive, and I will not try to cover half of the facilities available to the professional draftsperson. However, some of the important points that should be noted include the ability to trim or delete selectively sections which may overlap one another. This feature has important implications for the construction of objects which contain circles with horizontal lines intersecting them. Not only is it useful in this type of situation, but in areas which contain Fillets. The editing procedures are quite straightforward and require a little practice, but once you have used the package for a consistent period of time you will note that the powers contained within it can be utilised quite readily.

Not only is the program powerful in terms of straight two-dimensional drawings, but its Isometrics are also easy to construct. Simply clicking on sections that need to be transferred from one view to another is how straightforward it is.

Hatching routines follow international standards while at the same time allowing the user-defined fills to be implemented. Other

features include the ability to mirror views, merge them, cut them and so on. To gain a full appreciation of this system be prepared for at least one or two hours of demonstration.

I have included in the table a new product which literally landed on my doorstep as I was finishing this review. MCad looks as though it has a variety of features which would well be worth investigating in a follow-up issue.

Summary

After looking at the broad overviews it is apparent that what you pay is what you get. I suggest that if you are contemplating a CAD system on a Macintosh you consult a company that knows what it is talking about and, perhaps more importantly, study the table I have provided. While this is by no means exhaustive, it will give you an indication of the direction to take.

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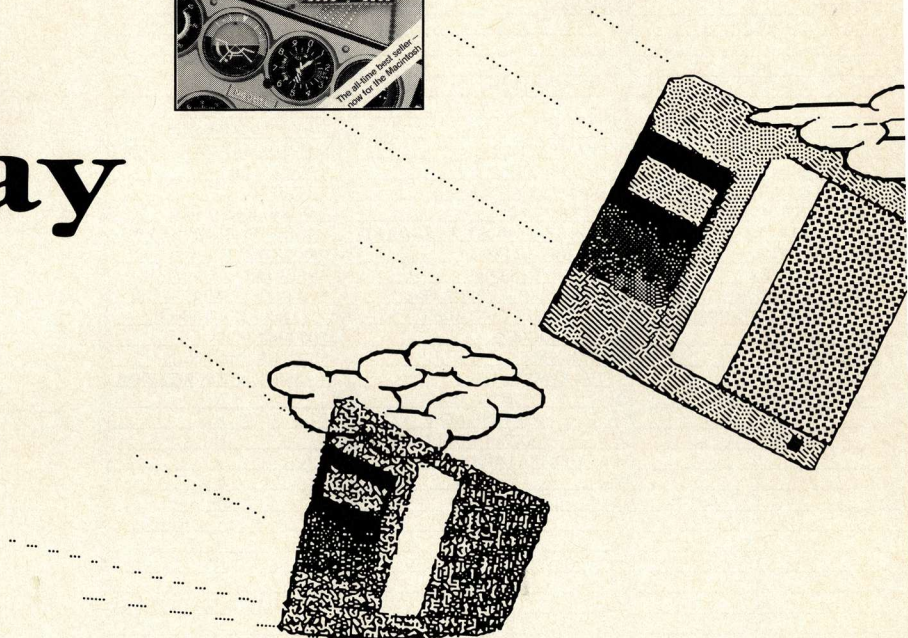
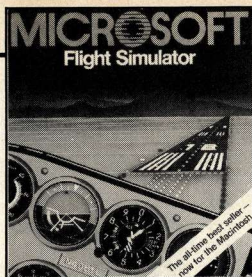
Distributed by:
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Some applications require a 512K Mac,
but most run from a 128K Mac.

PACKAGE	MacDraw	MacDraft	MiniCad 3D
PACKAGE	MacDraw	MacDraft	MiniCad 3D
R.R.P \$	\$295.00	\$399.00	P.OA
MAC INTERFACE	Y	Y	Y
SCRAPBOOK/CLIPBOARD SUPPORT	Y	Y	Y
SWITCHER SUPPORTED	Y	Y	Y
AUTO DIMENSIONING	N	N	N
SAVING FORMATS	PICT/DRAW	PICT/DRAFT	PICT/TEXT FILE
ROTATION OF OBJECTS	Y-LIMITED	Y-LIMITED	Y-KEYBOARD
ROTATION OF TEXT	Y-LIMITED	Y-LIMITED	Y-LIMITED
LINE THICKNESS	Y-LIMITED	Y-EXTENDED	Y-EXTENDED/MODIFIABLE
INPUT DEVICES	MOUSE-TABLET	MOUSE-TABLET	MOUSE-TABLET-KEYBOARD
OUTPUT DEVICES	IMAGEWRITER	IMAGEWRITER	IMAGEWRITER
	LASERPRINTER	LASERPRINTER	LASERPRINTER
THIRD PARTY PLOTTER DRIVERS	Y	Y	Y
SUPPORTED?	MacPlots 2-PROFESSIONAL	MacPlots 2-PROFESSIONAL	MacPlots 2-PROFESSIONAL
MEMORY REQUIREMENTS	128K/512K/1MEG	512K/1MEG	512K/1MEG
RAM DISK SUPPORT	Y-ASSIMILATION RAM DISK	Y-ASSIMILATION RAM DISK	Y-ASSIMILATION RAM DISK
LAYERING SUPPORTED?	N	N	Y-12 LAYERS
ANSI STANDARD FILLS	N	N	N
3 DIMENSIONAL MODELLING	N	N	Y
COLOUR SUPPORTED	N	N	N
ISOMETRIC DRAWING	N	N	Y
PROJECTIONS FROM ELEVATIONS	N	N	N
ZOOM FUNCTIONS	NOT AVAILABLE	MAXIMUM 6X	INFINITE
RE SHAPING	YES	YES	YES
RE SCALING FUNCTIONS	N-MANUAL EXPANSION REQ.	Y-BOTH METRIC & IMPERIAL	Y-INFINITE
SELECTIVE EDITING OF OBJECTS	N	N	N
ANGULAR DIMENSIONING	N	Y-RESTRICTED	Y-RESTRICTED
MEASUREMENT OF AREA	N	Y-VERSION 1.2	N
CIRCLES BY RADIUS/DIAMETER	N	Y-RESTRICTED	Y
ELLIPSES	Y-RESTRICTED	Y-RESTRICTED	Y
SYMBOL LIBRARIES	N	N	N
HEXAGONAL CONSTRUCTIONS	Y-RESTRICTED	Y-RESTRICTED	Y-RESTRICTED
SLOTS	N-MANUAL CONSTRUCTION	N-MANUAL CONSTRUCTION	N
FILLETS	N	N	N
CHAMFER	N	N	N
PANNING OPTIONS	N-SCROLL BARS	YES-WINDOW	YES-CAMERA
CONVENTIONS FOR LINE CENTRES	N	N	N
ETC., ADHERED TO			
MERGING OF VIEWS	N	N	N
CUT PLANE	N	N	N
TEXT ENTRY	Y	Y	Y
LEARNING CURVE	SHORT	SHORT	PROLONGED

EZ-Draft	MCad	MGMS
EZ-Draft	MCad	MGMS
P.O.A	P.O.A	P.O.A
Y	Y	Y
Y	Y	Y
Y	Y	Y
Y	Y	Y
DRAWING FILE/I.G.E.S	DRAWING FILE	Y-BY SELECTING AREAS
Y-KEYBOARD	Y-KEYBOARD	OWN FORMAT OR PLOTTER F
VARIABLE ANGLES	VARIABLE ANGLES	Y-VARIABLE
Y-EXTENDED/MODIFIABLE	Y-EXTENDED	Y-LIMITED
MOUSE-TABLET-KEYBOARD	MOUSE-TABLET-KEYBOARD	VARIABLE-LIMITED
IMAGEWRITER	IMAGEWRITER	MOUSE-TABLET-KEYBOA
LASERPRINTER	LASERPRINTER	IMAGEWRITER
PLOTTERS SUPPORTED	PLOTTERS SUPPORTED	LASERPRINTER
SELF CONTAINED	SELF CONTAINED	PLOTTERS SUPPORTED
NOT REQUIRED	NOT REQUIRED	SELF CONTAINED
512K/1MEG	512K/1MEG	NOT REQUIRED
YES-RAMSTART 1.2	YES-RAMSTART-1.2	512K OR MACPLUS
Y-256 LAYERS	Y-200 LAYERS	Y-ASSIMILATION RAM DISK
Y-MODIFIABLE	Y-MODIFIABLE	N
N	Y-EXTRA MODULE	N
N	Y-EXTRA MODULE/SCREEN	N
Y	Y	N
Y	Y	N
INFINITE	INFINITE	Y
YES	YES	Y
Y	Y	N
Y	Y	Y
Y	Y	Y-LIMITED TO TEXT DISPLAY
Y	Y	N
Y-EXTENSIVE CONTROL	Y-EXTENSIVE CONTROL	Y
Y-EXTENSIVE	Y-EXTENSIVE	Y
Y-EXTENSIVE	Y-EXTENSIVE	Y
Y-EXTENSIVE	Y-EXTENSIVE	Y
Y-EXTENSIVE	Y-EXTENSIVE	Y
Y-EXTENSIVE CONTROL	Y-EXTENSIVE CONTROL	Y
Y-EXTENSIVE CONTROL	Y-EXTENSIVE CONTROL	Y
YES-CURSOR PLACEMENT	YES	Y
Y	Y	N
Y	Y	Y
Y	Y	N-MANUAL DRAWING
Y	Y	Y
EXTENDED	EXTENDED	MEDIUM

Up, up and away



The SubLogic Flight Simulator was the first program which provided a realistic simulation of flight on a home computer. It was released in 1979 and worked on a system consisting of only 16K-bytes of memory. The new Macintosh version of Flight Simulator is far superior to its ancestor, as is the computer on which it works.

Although both flight simulators were created by Bruce Artwick and SubLogic, Microsoft is publishing the Macintosh version. This alone will ensure rapid success and a wide distribution. Nevertheless, Flight Simulator is bound to "take off" in the software market because of its multitude of features and endless playing time.

In bringing the very complex characteristics of flight to a small computer, so the manual claims, thirty-nine aerodynamic factors are taken into account. The result is a simulation which the authors

frequently relate to actual flight. In fact, they are pursuing the topic of acceptance and approval by the FAA (Federal Aviation Administration of the US) to allow time spent on the Flight Simulator to be officially recognised in flight training logbooks. Also, the manual lists a number of publications which may be consulted for further information on real-world aviation.

Take-off

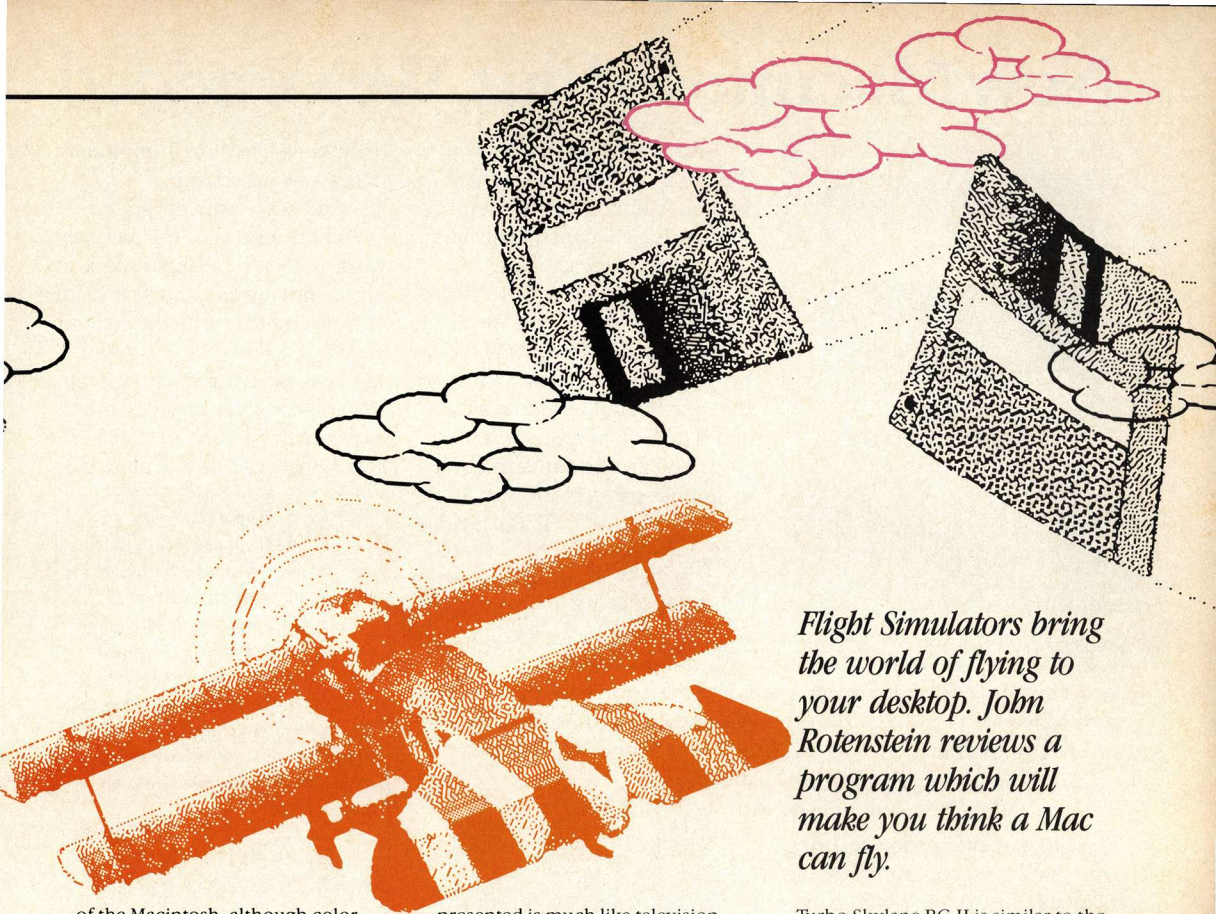
Although real-world flying can take many of hours to master, the Flight Simulator can be flown with only a few minutes' tutorial. General flight operations are controlled via the mouse — bank, pitch, throttle and brakes. This is all which is required to take-off and fly within the world provided. Further operations are controlled via the keyboard or pull-down menus.

Pilots are provided with an impressive amount of information

while in flight. Instruments presented (which meet FAA approval) include an airspeed indicator, altimeter, artificial horizon, vertical velocity and control position indicators. The instruments respond to all aspects of flight and can even be used to perform instrument landings.

In addition to standard instruments, a versatile radio stack is available for aerial navigation. When preparing for a landing, the pilot first tunes into the information service for the airport and is given weather and approach information. Next, navigation radios are tuned to beacons which provide information on heading and distance. Flight Simulator also has a transponder code used to identify aircraft, although it is never actually used in the program.

The view display window, however, is where Flight Simulators are compared with the real world. Images presented are the best possible on a computer with the graphics resolution



Flight Simulators bring the world of flying to your desktop. John Rotenstein reviews a program which will make you think a Mac can fly.

of the Macintosh, although color would greatly improve the visual impact. Grey scales are used to distinguish terrain, lowering the possible resolution of the image. An option is provided to turn off the shading, instead presenting wire-frame objects. This causes a notable improvement in the speed of operation.

The view from the cockpit may be in any of nine directions, including directly downwards. But the pilot is not restricted to the conventional position of the cockpit. The progress of the plane may be monitored from the control tower — ideal for the occasional fly-by. However, the most impressive view can be obtained via a spotter plane which follows your movements throughout the world.

The spotter plane can be intricately controlled to fly above, beside, behind, or ahead of your plane. Its altitude and distance from your plane may be easily modified. The view

presented is much like television commercials showing various aircraft in flight. A map may be recalled which shows your continually changing position. This is excellent when you feel you are lost, or when your compass has ceased to operate.

Not only may each of these views be zoomed to very high magnification levels, they may be presented simultaneously. Up to three windows can be opened — two for views of the aircraft and one for the map. The windows may overlap, fill the whole screen, or be scaled to any proportion. Needless to say, the more windows are open, the slower is the simulation.

As a final feature to add realism to the Flight Simulator, the sound of the aircraft is constantly emitted from the Mac's speaker and when connected to an external amplifier, is similar to sitting on the tarmac at a busy airport.

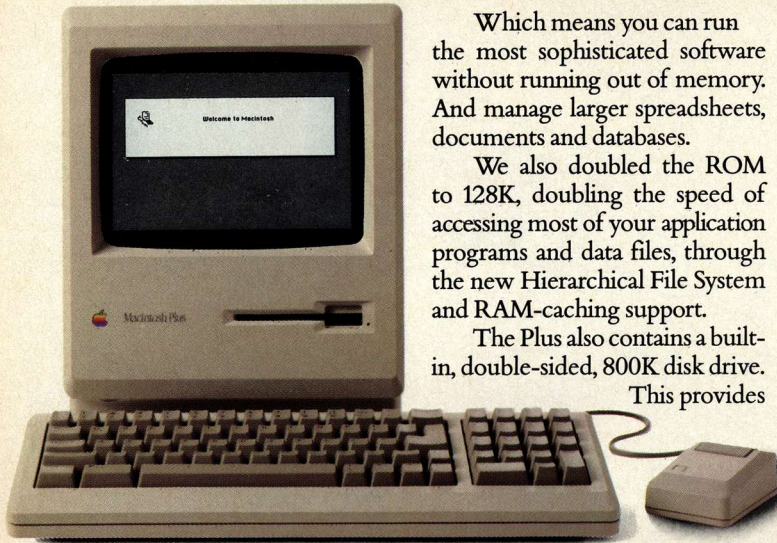
Three different aircraft are available for your flying pleasure. A Cessna

Turbo Skylane RG II is similar to the aircraft normally used for flight training. When in use, an authentic-sounding propeller noise can be heard from the Mac. The Cessna has a slow speed and low range capability when compared with commercial airliners, so it is not advisable to fly long distances in this manner.

For those seeking more speed and capabilities there is the Gates Learjet 25G. With its authentic jet sound, it can cruise at three times the speed of the Cessna (Mach .82) although it is less easy to control due to its greater inertial mass.

When the fun of real-world flying has faded away, there is always the WWI ACE Game which provides an active test of your accumulated flying skills. The game involves destroying enemy fuel depots and factories, and downing enemy pilots of varying skills. In the latter case, enemy planes appear as three dimensional images flying in your airspace, attempting to

New Macintosh Plus. We've added



This year Apple introduces a new Macintosh.

Macintosh Plus.

As the name suggests, it's evolutionary, rather than revolutionary

(It's not our policy to bring out totally new computers for the sake of it. Instead we strive to perfect existing ones.)

Macintosh Plus is as simple to learn and use as before.

But there are some big differences, encouraged, we don't mind admitting, by current Macintosh owners.

Some of you asked for more power, others speed. Some needed greater storage capacity, others expandability.

Some heavy number-crunchers wanted a numeric key pad and conventional cursor keys built into the keyboard rather than remote.

Done. Done. And done.

The pluses of this new Macintosh include a full megabyte of RAM (expandable to four megabytes).

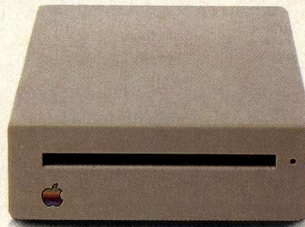
Which means you can run the most sophisticated software without running out of memory. And manage larger spreadsheets, documents and databases.

We also doubled the ROM to 128K, doubling the speed of accessing most of your application programs and data files, through the new Hierarchical File System and RAM-caching support.

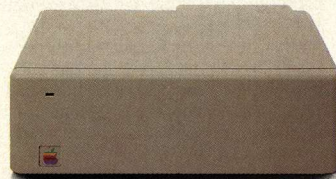
The Plus also contains a built-in, double-sided, 800K disk drive.

This provides

twice the capacity of the previous Macintosh and the equivalent of 400 typed pages, or a bulging file drawer.



If that's still not enough, you can always plug in another 800K external drive.



Or you can really go all out and add our new Hard Disk 20. (Its 20 megabytes are about 10,000 pages worth.)

Just plug in a Macintosh Hard Disk 20 and you can keep all your software, files, worksheets and

documents within a moment's notice of your screen.

Add the Apple program Switcher, and you can actually work with several applications at once, moving information from one into another with the greatest of ease.

So you can transfer notes from an outline to a report – or numbers from a data file to a spreadsheet – as fast as you can click your mouse.

AppleCare.

All Apple products come with an automatic 3-month warranty covering all parts and labour.

But this year, Apple introduced a sort of "Warranty Plus" through the AppleCare service programme.

If you fill out and mail to us the registration form enclosed with your equipment, you will receive nine extra months' cover on top of the normal three.

Macintosh Plus also features a new SCSI connection port (dubbed "Scuzzy" in typical fashion by the development team).

SCSI stands for Small Computer Systems Interface and it's an industry standard.

We've virtually opened up the architecture. But what we've really done, of course, is open up a whole new world of possibilities.

The Scuzzy port lets you daisy-chain up to seven high-performance (and often low-priced) peripherals like hard disks, file servers and tape backups from all sorts of third parties.

Given all this power, it made sense to team it with equally impressive printers.

The new LaserWriter Plus is just such, producing documents with text and graphics of publishing quality.

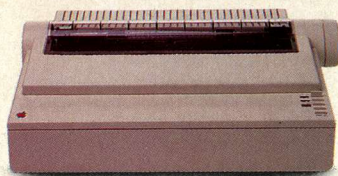
everything except complications.

And it maintains this fidelity on copy paper, letterhead, labels, envelopes or overhead transparencies.



LaserWriter Plus has 35 different typefaces built in, a choice that would embarrass your local printer (and his invoices).

But if you don't need publication-quality printing, you can have near letter-quality by teaming up your Macintosh with the ImageWriter II.



It prints in three different modes: high-quality, standard and draft. And churns it out at speeds of up to 2½ pages per minute.

You can feed in single sheets automatically with the optional SheetFeeder.

And print up to seven colours using appropriate software.

ImageWriter II can also be shared with other Macintosh users via AppleTalk.

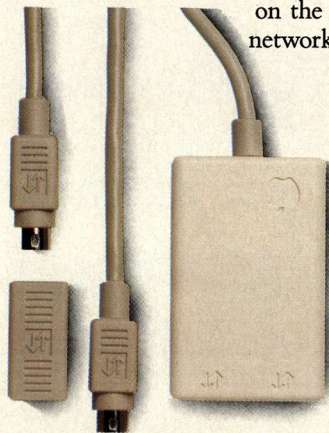
But this Macintosh isn't called Plus for nothing. You can just add and add.

Items like an AppleTalk Personal Network.

It's the most flexible, low-cost, easy-to-set-up, easy-to-use network around.

It'll connect up an office full of Macintoshes, LaserWriters, ImageWriters and file and disk servers – 32 devices in all.

Using an electronic mail package, you can send messages to any Macintosh screen on the network.



Or with EtherMac software you can share information with other computers. (Our computer is so friendly it'll even talk to IBMs.)



Add an Apple Modem 1200 to your Macintosh and you can talk to anyone virtually anywhere.

With a communications program like MacTerminal, a standard telephone and an Apple

modem, your Macintosh can plug into electronic information services like Viatel, Minerva and Midas and communicate with mainframes and minicomputers.

If you already own a Macintosh, there's another plus.

You can upgrade your machine to the new one megabyte. Ask your dealer for upgrade details.

You can also upgrade your LaserWriter to become a LaserWriter Plus.

Get hands-on with the new Macintosh Plus.

You should like it.

You helped design it.



The Apple business card.

If you wish to own a Macintosh system, you can take advantage of the Apple Credit Card, available from participating dealers.

You can use it to purchase computers, peripheral equipment and software with no down-payment and less impact on your cash flow.

If you qualify, in most cases you can take your own Macintosh with you and dive straight into work with it the same day.

For an authorised Apple dealer near you outside Sydney, you call toll-free (008) 22 1555 or Sydney 908 9088.

AP 219/Palace



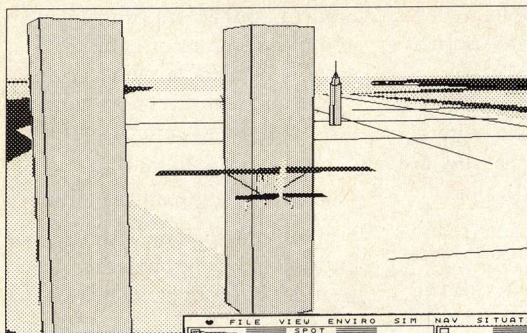


Figure 1
A view from the spotter plane while flying between the twin towers of the World Trade Centre in New York, with the Empire State building in the distance.

Figure 2
An example of a multiple window flight display showing cockpit, spot plane and map views. The control panel is off the bottom of the screen.

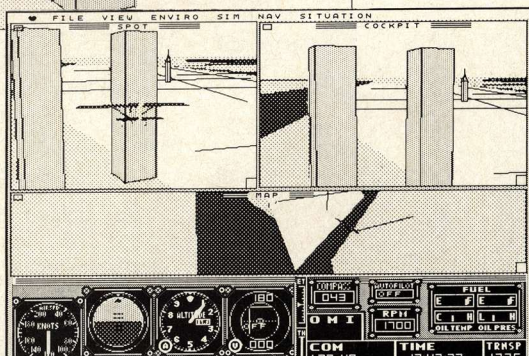


Figure 3
Full flight panel and Oakland 27R runway. The opening and default screen.

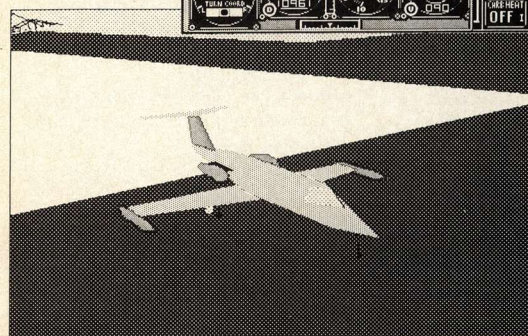
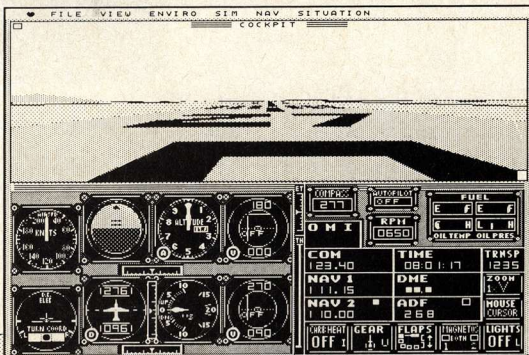


Figure 4
A view of the Learjet from the spot plane.

ground your aircraft before you do the same to them.

However, the real-world flying is where Flight Simulator excels. Rather than flying within a limited area populated by a few mountains and a river by which to navigate, Flight Simulator brings the world to your disk drive.

Included with the Flight Simulator, both in flying space and maps, are five areas of the continental United States. The areas New York/Boston, central and northern Illinois, Seattle, Los Angeles and San Francisco/Oakland provide over one hundred airports. Unfortunately, these charts lack the detail of charts provided with earlier version of Flight Simulator and many airports are listed but not shown on the charts. Maps of 23 large airports are also included to aid approach and navigation.

While there is still a limited amount of scenery available, environmental factors provide excellent flying variety. Seasons of the year may be selected, causing icy runways in winter and poor lift conditions in a humid summer. Cloud and fog layers, winds and turbulence may be chosen to add a bit of realism to your flights.

Coming in for approach

Perhaps the best area of scenery is in New York where there is the Statue of Liberty (although only two dimensional), the Empire State Building with its characteristic spike, and the twin towers of the World Trade Centre which are ideal for flying between. Collision with these objects, as with the ground, results in a cracked windshield and a return to starting position of your flight.

Sometimes collisions can be most spectacular and worthy of a replay. Flight Simulator provides this feature, giving up to seventy-five seconds replay on a one M-byte Mac. Not only do the instruments replay the actual event, the view may also be changed. If your crash happened while you fell uncontrollably, unable to detect which way is up, the sequence of events may be replayed from the spotter plane, allowing you to see what actually happened.

Up to twenty of your favorite flying situations may be saved to a disk, and

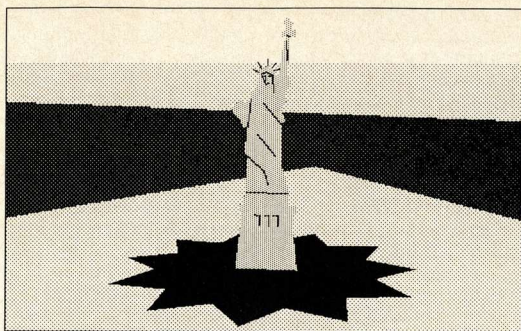


Figure 5
The Statue of Liberty.

it is possible that more scenery will be made available by Microsoft to expand your flying adventures.

Many further features are available to willing pilots. The reliability of the aircraft may be decreased, causing instrument failures, engine and fuel system problems. Realism can be added by having to start engines

manually, by instrument lights burning out, and by natural forces counteracting your control movements. To practise visual flying or instrument failure, instruments may be removed from the panel selectively.

Landing

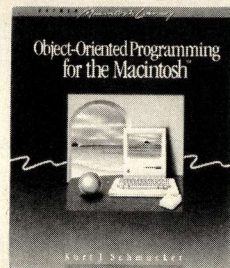
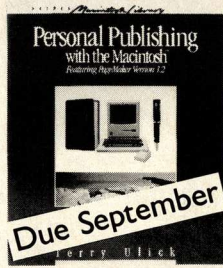
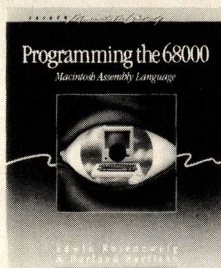
The world is big. Therefore, it is not always exciting to fly the aircraft over vast, empty lands. Instead, the

aircraft's position and altitude may be directly entered into the Flight Simulator, instantly transporting the aircraft to a new place. This is most useful for trips to and from new airports.

A "Slew" feature may also be used, which causes the plane to move under exact controls. For example, if you wish to take a closer look at the Statue of Liberty, Slew mode allows you to move your aircraft without actually having to fly. Move left, move up, bank left — all with a simple keypress or mouse movement. You can literally turn on a coin.

For those normal situations where a pilot's work is never done, an autopilot is most welcome. The Flight Simulator autopilot is able to level the wings to counteract turns, lock on to an altitude, heading, or navigational beacon. Just before a fatal crash, it is most interesting to activate the autopilot and see how the computer

HAYDEN *Macintosh Library*



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- Macintosh Multiplan
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would try to avoid the inevitable.

Having mastered conventional take-off and landing routines, willing pilots will undoubtedly try their hand at aerobatics. Previous versions of Flight Simulator came with a manual demonstrating a number of aerobatics manoeuvres, but the Macintosh version sadly makes little reference to such techniques, apart from directing the reader to other publications.

Nonetheless, Flight Simulator is capable of performing the most daring aerobatics in a choice of aircraft. Spins, loops and rolls can be performed with the flick of the mouse, making way for more challenging manoeuvres including inverted flight, the Split-S, Hammerhead and English Bunt.

While flying inverted, controls behave backwards. That is, to increase altitude the stick is pushed forward rather than being pulled back towards

the pilot. However, inverted flight causes the oil pressure to drop rapidly, resulting in an engine failure. The only way to correct this situation is to negotiate a roll without nearing the ground, after which the oil pressure returns and the engine will once again function.

Ground control

Perhaps the only major annoyance with Flight Simulator is the non-standard user interface. While windows and menus behave as normal, they do not appear nor respond like those found in applications software. With a bit of practice one soon learns not to move the mouse for a second or two after making a menu selection and how to move the windows about. Nevertheless, it is a disappointment from the company which claims it helped the Macintosh.

Overall, Flight Simulator is an excellent package, sure to provide hours of flying enjoyment. A 512K

Mac is required to take advantage of all features, although 128K owners are not excluded from the fun.

For those situations you want to remember, Flight Simulator provides screen printing and saving facilities. It even allows the screen to be enlarged and printed over twelve pages! It is copy protected, requiring the master disk to be inserted when run. Hard disks are not supported, nor is an external drive. A 150-page manual is provided in the standard Microsoft format (spacious, with index, glossary and illustrations) which covers all aspects of operating your new flying machine.

If you like a bit of a flight but don't own a plane (or even if you do!) Flight Simulator will find a place in your software library. You may well discover that flying is an undiscovered talent, making you the next Ace of the Sky.

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Electrically identical to Apple's own 512K upgrade, the Scarlan Computer Services upgrade offers the same reliable power, at a fraction of the cost.

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It will greatly speed up the operation of any Macintosh and allow the user to execute programs and combinations of programs which would not otherwise be possible.

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HARD DISKS

20Mb Internal Hard Disk

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The Internal Drive is a multi-user hard disk for the Macintosh 512K or Plus computer. Mounted internally, the drives features: multi-user print server, print spooling, disk cache, incremental backup and password protection as well as the Hierarchical Filing System from Apple computer. Simply add the inexpensive AppleTalk cables between other Macintosh computers for multi-user capabilities.

20Mb External Hard Disk

\$2549

20Mb Tape Backup

\$2359

85Mb Hard Disk + 40Mb Tape B/U

\$10,279

172Mb Hard Disk + 40Mb Tape B/U

\$12,599

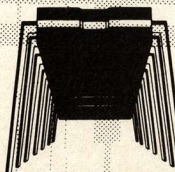
MacServe™ is included in all hard disk prices.

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Fujimax Floppy Disks: SSDD \$52

DSDD \$75

* All hardware upgrades include a 180 days warranty and various Utility software for Ram disk operation and installation. WHILE STOCKS LAST.



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Editor's choice

Although I was never one of the elite few who had the dubious honor of owning or using a 128K-byte Mac, I can certainly sympathise with them.

After using a 512K-byte Mac with an external 400K-byte drive for more than a year, I was often frustrated by the relatively small amount of storage space afforded by single sided disks. Mind you, 400K-byte is still better than 360K-byte and try as I might, I never could get a 5¼in disk to fit in a pocket. Nonetheless, I had to try all sorts of tricks to get what I wanted to fit on one disk actually to fit.

So when Apple announced the double-sided disk drives I was certainly keen to try one. After all, I was looking forward to storing more than one application on a disk thereby improving the use of Switcher and reducing the number of disk swaps, or keeping all the stories in each issue of *Australian Macworld* on only one disk, or increasing the size of a System file until it is bursting at the seams with fonts and 60K-byte desk accessories.

Besides, *Australian Macworld* contributors have so much to say nowadays, that the articles they send me can be anything up to 205K-bytes big, and you just cannot edit something that size without some sort of difficulty on a 400K-byte system.

However, despite the popular opinion that Apple's 800K-byte disk drive does not work with the "old" ROMs being incorrect, it is just a little more difficult to get the drive up and running than it is with the subject of this review, Xyber's latest product, a 800/400K-byte disk drive.

Made in Japan for an OEM contract for Xyber, the new disk drive is an alternative to Apple's own drive, and, it would seem, somewhat more intelligent.

Of its major features, the most impressive is its ability to read either 400 or 800K-byte disks. Indeed, this feature is so well implemented that none of the software I ran using the drive (which I have been using for six weeks) had any problems with determining whether the disk in the external drive was single or double sided. This provides the ability to read MacPlus disks, an ever increasing need.

As a result I have been able to store a system folder with Imagewriter and LaserWriter drivers, two word processors, a spelling checker, and documents and have enough room to add extraneous files such as a startup screen, or a RAM disk.

Furthermore, the drive has another feature that sets it apart from other disk drives. An eject button. Unfortunately, using the eject button while the Mac is returning to the Finder from a application can cause a system error.

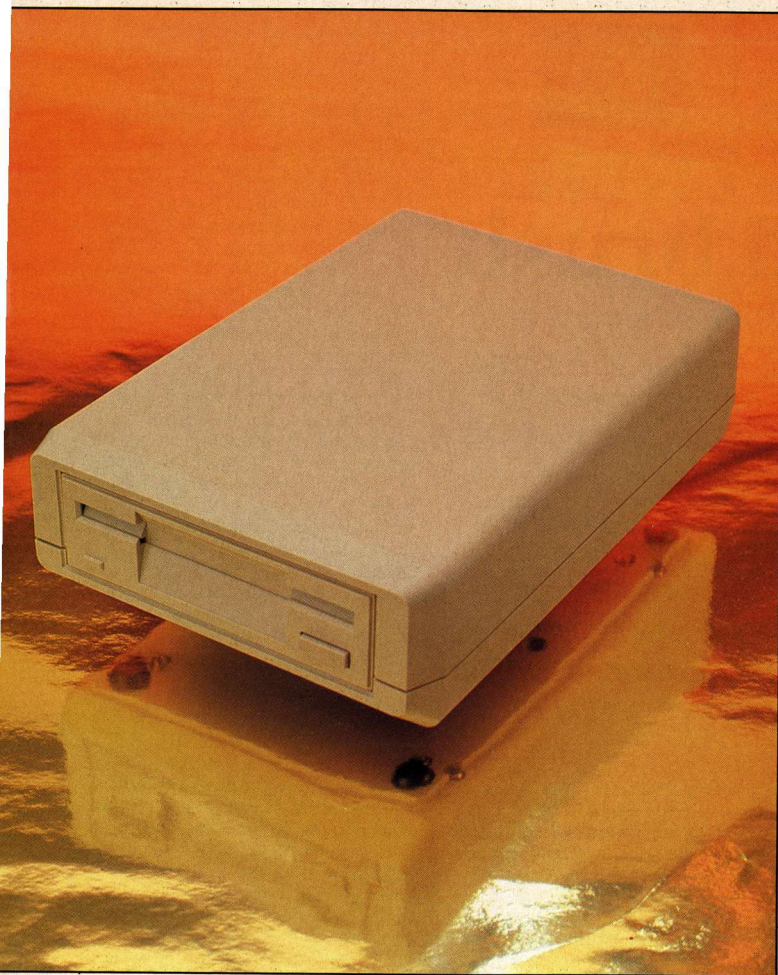
This is because, unlike when the command -shift-2 is used, when this button is pressed the Mac is not aware that a disk has been ejected so it still tries to read the directory blocks, and, of course, grinds to a halt.

Needless to say, I only did this once, and as disadvantages go, it is well worth the risk, I, for one, would much rather be able to eject a disk when I want to, without having to wait or use a paper clip.

Other features include CMOS circuitry throughout, a brushless DC motor, a self landing mechanism which does not try to get your fingers as well, and color and style co-ordination.

MAC

*One of the problems
some Mac users have
is not enough
storage space. Even
with an external
drive, this can be a
problem, and with
hard disk systems
priced too
expensively for many
users, an 800K-byte
disk drive could be
the answer. Chess
Wade takes a look at
one.*



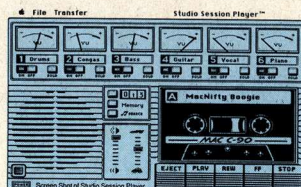
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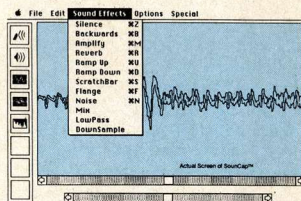
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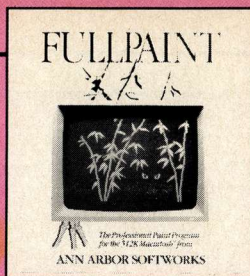
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A loaded brush

FullPaint works using the original interface style of MacPaint, and then makes an easy transition to a broader range of features. Creating a design using this program's sophisticated on-screen operation is like walking into a well-armed draftsman's studio and discovering easels, canvases, paints and brushes rubbing shoulders with drafting machines, lettering templates and grid paper.

All the MacPaint tools are available — brushes, pencil, shades, lines, shapes, typefaces and eraser. MacPaint editing abilities (including shrink, stretch, copy, paste, repeat copies, flip, rotate and invert) are also offered. Special effects added to the Edit menu and Free Rotate, Skew, Distort and Perspective. These features take FullPaint close to the world of third dimension, in its ability to continually redraw shapes and text from a number of angles.

Stacking your canvases

A major attraction in FullPaint is its multiple document window display, allowing four images on-screen simultaneously. These windows can also be shown stacked. Unstacking returns screen output to simultaneous view. Should the tools screen hinder you at any time, simply use the Hide Tools option in the Windows menu to clear the image temporarily.

The Palettes may also be moved around the Desktop, which often occurs in a traditional drawing board environment, where one may need to work at length on a particular area with certain tools. This feature reduces "mouse hand fatigue" and lets you customise your workbench.

Moving around the active window in FullPaint horizontally and

Since its introduction, a number of packages have been released to enhance MacPaint, but none could have replaced it — until now. Lisa Romano, Australian Macworld's art director reviews the next generation in Mac graphics — FullPaint.

vertically is easy using its built-in scroll bars. Holding down the drawing tool while you direct its cursor off the window will continue to scroll the page in that direction. Both these features are available in FatBits, which makes cleaning up large mistakes in difficult areas much quicker. By using Shift key and the hand icon, you can restrict whole window movement to exact horizontal or vertical directions.

Using a dialogue box, the artist may select a custom font size, thereby accessing sizes not available from the menu. The same dialogue box offers the Mouse Crawl option. Mouse Crawl advances the cursor in one pixel increments when you need exact placement, and once selected may be turned on and off using the Caps Lock key.

Accuracy and consistency are made possible with the assistance of Rulers (with a choice of inch,

millimetre or point measuring systems). The Rulers on each axis of your window monitor your current cursor position in relation to the top left hand corner of the page with dotted lines, which skim backwards and forwards as the cursor changes position on the page.

FullPaint users will delight in the speed of MouseSpot. Even greater feedback on cursor position is obtained using this rather inconspicuous, yet powerful monitor. Its continuous readout display shows cursor position as well as the exact size of the shape currently being drawn, based on three axes. Determining the increments from a choice of three measurement systems automatically adjusts the Rulers on the document you are creating.

Flexing your brushes

Depending on their field of design, artists will be inclined to incorporate the graphics they create on FullPaint into other documents, for example a PageMake, MacPaint or MacDraw file. Alternatively, they may find it necessary to instal Switcher, and access MacPaint. A design may be so good at draft stage that the client decides to go ahead, and when accuracy is crucial, access to the LaserWriter is a must.

All these needs are catered for and consequently steer this program's capabilities towards the business/professional environment. At the same time, they are enhancements in a package styled closely on MacPaint, a very creative workstation, less likely to be fully utilised in an office situation. This blend of two complementary working environments indicates a greater trend in the business community to promote and identify their ventures by making use of existing publishing resources inhouse.

Businesses may now gain access to

some tools for communication previously only available inside a design studio or publishing house. FullPaint is consequently a ready addition to any desktop communications workstation. As well as enhancing the tools found in MacPaint or MacDraw, the software is compatible with these and supports the LaserWriter with LaserPrint to give enhanced printouts.

Managing your art files

Organising file storage and retrieval is sometimes beyond even the most creative artist, and Windows relieves the situation by splitting your desktop into four windows. By clicking inside its area, any window displayed will become active.

This feature allows you to work on more than one file, and also to Copy and Paste between documents more readily.

Choosing an area larger than the size of the screen is possible in FullPaint. By holding down the option key when dragging the marquee across your selection, the window will scroll down the page as long as you continue to drag past its boundary. As a shortcut to selecting the whole page, triple-clicking on the marquee icon is a great feature. Unfortunately, this precludes you modifying your selection with any of the special effects options.

To view your current file, three icons are displayed on the palette for full screen, full screen with the menu bar and lastly window on desktop. You can size your main screen up or down, allowing room for desk accessories to be displayed while you work in FullPaint. Here, the Calculator can be used in conjunction with MouseSpot to calculate projected perspectives and rotations, this way building a database of options on visual record.

The multiple document facilities offered in FullPaint allow a complex final product to be built up from several isolated images, giving greater "white paper" workspace when the need arises. This is especially useful when combining two perspectives of say, text and graphics. Feeling cramped when you want to be creative can detract from a software

package; however FullPaint is like a sketchbook to which you can keep adding pages.

Special effects lettering

Sometimes, in packaging and product design, it is necessary to show type from a certain perspective, or to render it distorted by an irregularly planed surface, or both. This aspect of drawing can be extremely time-consuming and difficult to achieve accurately using traditional techniques. FullPaint makes it as simple as choosing a custom point size and style, selecting the image and, by using the Rulers and MouseCrawl or MouseSpot with a special effect menu choice, watching the screen redraw the original text automatically as you drag the mouse.

The artist can give perspective to a distorted selection, distort a perspective, or rotate a distortion freely, rather than being restricted to 90 degree changes, or can even put a perspective image on a skew. The possibilities seem to be infinitely variable by simply combining different effects. This is the part of FullPaint which I found to be the most exciting to use.

Of course, the same principles can be applied to circles, squares, and images captured from other documents and programs. Imagine a scanned image of Laurel distorted enough in the body to resemble Hardy, or vice versa! The imagination is the only limit to such graphics, although with extreme editing, images can lose their original shape beyond recognition. At this stage of special effects "overkill", the bit-mapping of solid area outlines begins to break up into jagged, disjointed creations that are in essence, FullPaint to the brim of its ability.

Getting into print

Bit-mapped images in MacPaint do not improve greatly when output to LaserWriter. However, in FullPaint it is possible to divide a file into four or sixteen tiles, re-align them using Rulers and MouseSpot into a giant page and thus achieve a resolution

of either 150 or 300 dots per inch, rather than the 72 on screen.

There are dialogue boxes for either ImageWriter or LaserWriter. ImageWriter gives you four sizing options, and LaserWriter gives you a full selection between 25 per cent and 400 per cent. In both cases, you can print either the whole page, or just a selected area indicated with a marquee.

To obtain a printout of the entire screen you are working with, simply depress the Caps Lock Key, and hold down the Command, Shift and 4 keys at once. This is a convenient way to store copies of an image at various angles and perspectives, for comparison before final rendering of the design.

A LaserPrint utility available allows you to split your document into multiples and print "Super Poster" sizes by varying the number or percentage size used. This means that giant size banners and display posters are possible with high resolution text and graphics up to 4096 pages in size (blanks are not printed). This option is not recommended for urgent jobs though.

The most surprising part of trying FullPaint for the first time, was the easily accessible nature of the interface itself. The menus were simple, the dialogue boxes and on-screen help easy to follow. Despite the number of features, the desktop was flexible enough to be uncluttered when concentrating on a work of art and cluttered when files needed sorting.

In FullPaint, creatively-oriented graphics software may therefore also offer advanced features to assist graphics designers, architects and engineers with the preparation of their initial sketches. Certainly, there will always be a need for both in any modern studio, as competition in the marketplace is so high that it is essential to provide a unique presentation technique in rendering a design, or creating a digital work of art.

MAC

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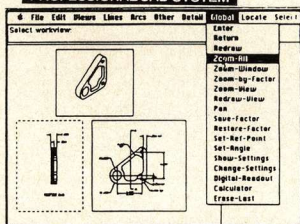


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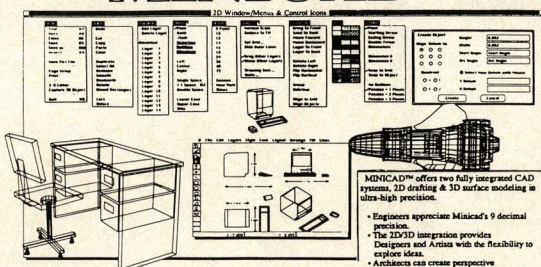
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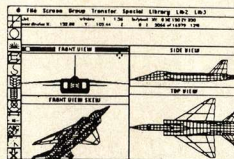
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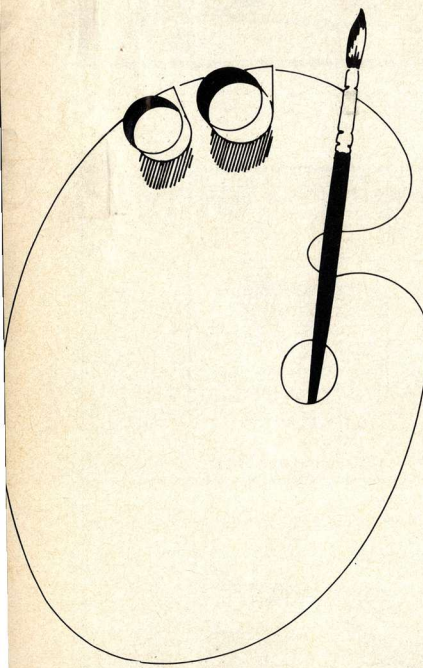
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While the Macintosh is obviously capable of producing highly detailed graphics, its value as a legitimate tool for use by “serious” artists is a point still being debated. Malcolm Thain explains why.



As an artist exploring the Macintosh's capability as a legitimate tool for the production of serious artwork (including fine art since April 1985) I have had some stimulating and rewarding experiences, but I must also admit to a measure of frustration and disappointment.

Of the three main causes for this sorry state of affairs, the Macintosh is perhaps the lesser offender. More guilty are the software designers but most guilty is yours truly — the artist, the user.

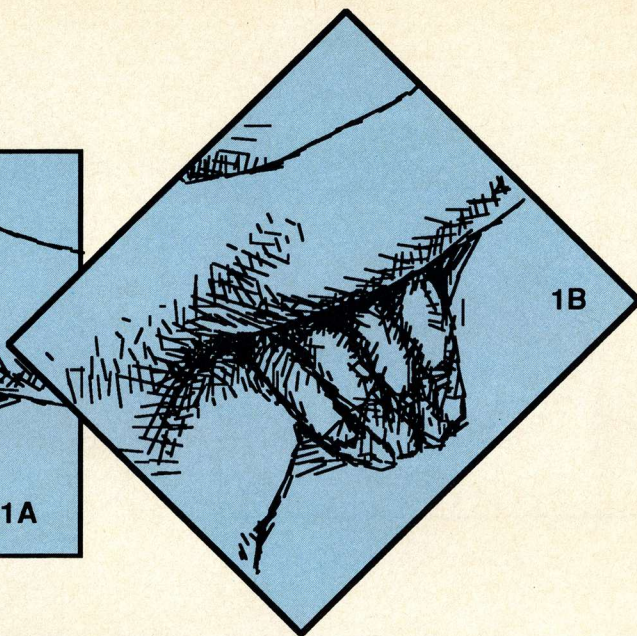
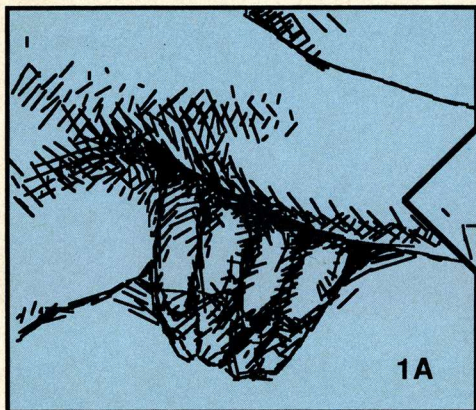
The serious business of generating quality in any medium requires the constant extension of limitations inherent in the medium, and computers just do not have the elasticity to cope with this fundamental character deficiency in the intrepid artist/user. The computer's

limits are fixed and rather obscure to the lay user. While it is possible to overcome some of these, the user needs to acquire considerable knowledge of, and familiarity with, the machine and its software to do so.

The Macintosh is acclaimed as *the* easy to use computer — revolutionary in its accessibility. This I regard to be a fair assessment, but with one important qualification: once the user strays from the prescribed course, he is up against the unknown — where not even the experts can help. And software traps are, often as not, characteristically trivial but more often than not devastating in their effect.

Software frequently fails the artist because, it seems, no artist who has familiarity with and knowledge of professional artwork production has been involved in the design of the program. Consequently I would argue

MacKelangelo?



that there is no single graphics program for artists which meets their requirements. MacDraw is the closest yet and it is really a drafting program anyway. MacPaint is great . . . for recreation, and besides FullPaint does it much better.

This is not to say they are not useful ancillary graphics tools, but for me the Macintosh can only function as a plausible graphics production machine with several of the available graphics programs when used in conjunction with Switcher or other utilities. And you can have some fun juggling that lot!

Macintosh deserves better treatment; and there is no doubt in my mind that this machine is capable of better, given the software, especially with the addition of expansion devices such as additional RAM, a hard disk and a digitising tablet.

The question to ask here is: do the results, limited as they must be, justify the capital outlay required for this equipment? The answer is a qualified yes.

Behind the Macintosh at this level of production is a pretty impressive capacity for text and image

manipulation, in the form of laser printers, PostScript and (though I know little about it) video. There is a lot of potential here. The software seems to be the main restriction, but it has come a long way. Applications such as FullPaint, PageMaker, JustText and MacDraw are largely successful and creditable attempts to provide adequate tools.

For the home user or amateur artist the Macintosh offers a whole world of creative graphic possibilities, especially if they have access to a variety of programs to mix it with. Though I do not subscribe to the notion that a computer is going to make a better artist of anyone, it certainly facilitates a range of graphic manipulations and enables those who claim to be entirely without wit when it comes to drawing a straight line to do so, and much more.

You may think it odd that an artist should choose to get so heavily involved in a monochrome computer when there are all those flashy colors out there on other machines. This brings us to the key to the whole

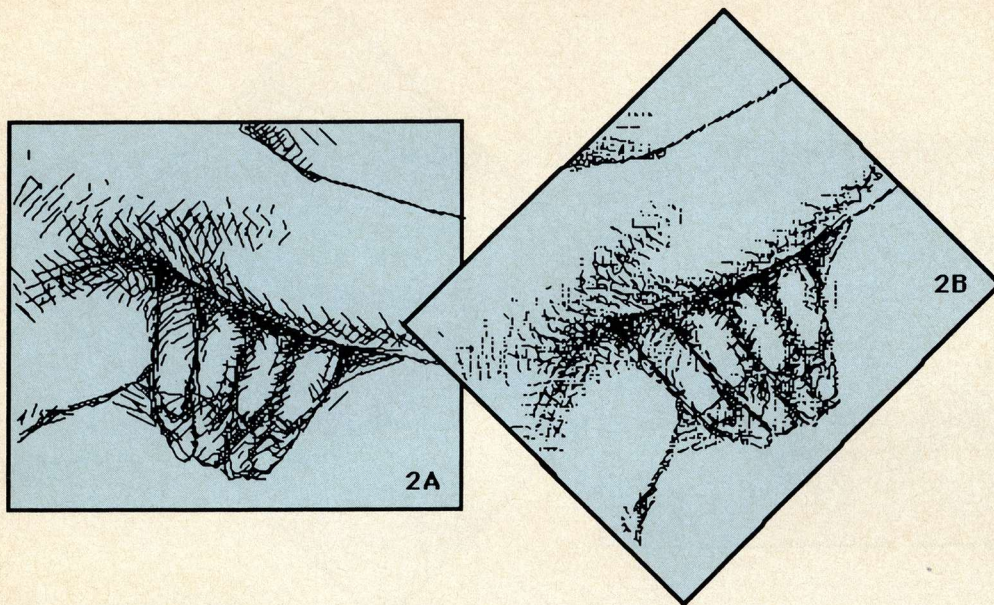
issue of the Macintosh and its graphics: relatively high resolution in combination with its easy user interface.

Only this unique combination makes computer-generated art a possibility for me. Even so, resolution remains the primary limitation on the Mac, and I believe a resolution of at least 800 x 600 pixels on a nine inch screen is needed (this in preference to lots of colors at the Mac's current resolution).

The reason the Mac is monochrome and high resolution is ironically not for the sake of the artist, but for readable fonts.

So why is resolution so important? Well, one of the characteristic advantages of computer graphics is the ease with which the computer manipulates images: scaling or resizing for example. But what happens when the size of a bit map is altered? Resolution flies out of the window and at best you have distorted line thickness, at worst you have an image composed of housebricks.

Fortunately bitmap smoothing routines and high resolution output devices such as the LaserWriter allow reasonable compromises for general



publishing needs. An alternative to bit maps is the so called object-oriented graphics, a system which basically records a list of co-ordinates of graphic information using graphic routines (primitives) built into the ROM on the Mac and called QuickDraw. MacDraw is a program using this approach.

The disadvantage with this system is that the space required to store the information can be excessive, particularly with complex images, smoothed curves (smoothing is the process of dividing a curve up into shorter but more numerous line segments) an polygons (filled polygons are the worst offenders). Screen refresh is painfully slow with some types of complex or large images and MacDraw seems to refresh at every opportunity!

The difficulty with this kind of program is the storage of tonal rendition — hatching, screens, dots or dithers are not easily incorporated, and if they are, they require much more speed in processing and much more memory. Bit map programs like FullPaint are good for this, particularly on high resolution screens.

This affects the artists as they tend to work in a relatively formal and

linear style (line & fill) with MacDraw and with a looser painterly or tonal technique using MacPaint.

For the production of artwork for publication MacDraw-type programs are often preferable because of the ease with which images can be resized without the resolution trade-off. This is significant when you are working in conjunction with other programs such as PageMaker (which happily do not convert "object graphics" from the Clipboard into bit maps), because you are able to manipulate the image in these applications with impunity.

The illustrations compare the effects of rotation in MacDraw 1(A,B) and rotation in FullPaint 2(A,B). The sketch was initially executed in MacDraw using the straight line tool, and it was then rotated (1B). The original drawing was then pasted into FullPaint and subsequently rotating using the "Free Rotate command" (2B). Comparing the two (1B and 2B) closely you will note that the objects of MacDraw have rotated with more fidelity to the original than the bit

map and that the lines remain sharp and unbroken. (Aesthetically you may prefer the fuzzier bit map, but that is beside the point.)

The elements of a drawing created in such programs as MacDraw are discrete objects which can be independently selected, grouped with other selected elements and are subsequently able to be manipulated independently. This sort of flexibility is very useful in publication graphics. Bit map images generally need to be tailor-made.

This does not make MacDraw the answer to the artist's problems, far from it. As I stated earlier, it is essentially a drafting program and the artist very often has to extract the useful features from a variety of programs to achieve his aim — and this highlights the intrinsic power of the Clipboard and the whole Macintosh operating system. Though much is possible with MacDraw, given persistence and familiarity, it is difficult to produce attractive images, especially illustrations. Diagrams and charts are much easier, of course.

To develop the Macintosh into the really practical graphics tool for professional art production that is so

nearly is, I would require an optional, large high resolution screen, an additional processor dedicated to QuickDraw and, less importantly, some color (minimum 6 colors at high resolution!)

The rest are software problems. Most of my serious obstacles at different times have been verbalised in the form of the following questions (generally tinted with a touch of blue):

- ☐ Why doesn't MacDraft resize grouped objects?
- ☐ Why doesn't MacDraw rotate (in small increments at least)?
- ☐ Why doesn't PageMaker create horizontal guides, number pages or allow inclusion of pages from other PageMaker documents?
- ☐ Why doesn't JustText display graphics and layout on the screen?
- ☐ Why doesn't FullPaint cut a whole page to the Clipboard?
- ☐ Why don't any of the above roll the printer back for *accurate* overprinting, if desired?

☐ Why doesn't MacPlot allow for the registration of overlays? Why the restricted capacity of approximately 64K-bytes (32K-bytes using the old ROM)?

These questions do not necessarily reflect deficiencies in program design. There may well be good reason for these shortcomings, the questions are intended to highlight the particular needs of art at a professional level as experienced with desktop publishing or any serious graphic undertaking in the Macintosh environment.

These programs represent what I have found to be the most useful for my work, they do what they were designed to do pretty well, some excellently. They were never intended to be tools for my specialised area of creating professional artwork. (The exception perhaps being FullPaint, but I must emphasise that the resolution/bit map dilemma as

described earlier is limiting. FullPaint is extremely good for drawing, the interface intelligently conceived and I find the program a pleasure to use.) However, it is object-oriented graphics that we look to predominantly in our studio, consequently most of our product, be it artwork or graphics software, supports MacDraw. (The Telegraphics advertisement is done entirely with MacDraw.)

So, while the software continues to develop, the Macintosh is, in the final analysis, a viable graphics medium. Until adequate art production programs are developed the Mac artist is just going to have to accept limitations and do things all those hard ways.

The message is that high standard production of artwork on the Macintosh requires of the artist: time; ingenuity; new skills and knowledge; total familiarity with hardware and software; understanding of the medium's limitations and finally, patience.

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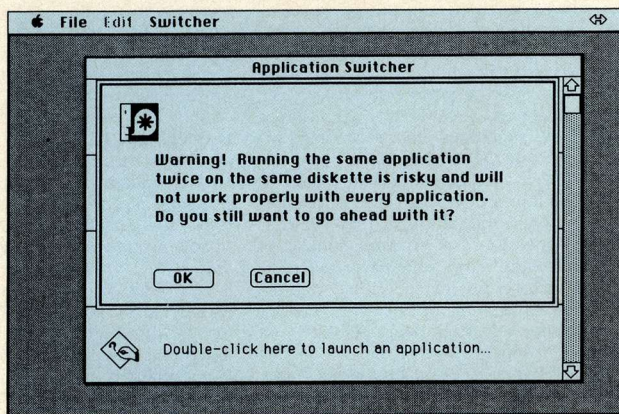
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An exchange of Macintosh discoveries

Edited by Neville Angove



Doubling Up Under Switcher

I often like to work on several documents at a time, so Switcher seemed perfect for my working style. Then I discovered that even if I changed the names, I could not have two copies of MacPaint or MacWrite in Switcher simultaneously.

The problem is that these applications, and many other Mac Applications, use temporary files. No matter how you rename MacWrite, though, the temporary files are still generated with the same hard-coded names, and the whole castle crashes very quickly when (say) MacWrite finds a copy of a temporary file it did not create. But I found a solution of sorts that works to a limited extent.

If you originally load the same applications — under different names — from different disks, then their temporary files are created on those same disks and no confusion is likely to happen. Since you cannot open more than three good-sized applications in 512K-bytes, and you can fit only two copies of

MacWrite and one of MacPaint on two 400K-byte disks, this is no real problem.

Of course, with 1M-byte of memory and two 800K-byte disk drives, the opportunity to confuse the Mac is easier to take advantage of, but if you remember to keep only one copy of any application under any name on the one disk, identity problems should be avoided.

Another way, of course, is to allocate MacPaint more than 200K-bytes under Switcher, so it does not use temporary disk files, and use version 2.2 of MacWrite. An alternative for this MacWrite solution is the Mac Plus version of the package, which like Microsoft Word allows up to four windows/documents simultaneously. Of course, you have to pay \$A165 for it, but that is a small price to pay for the convenience of not having to save and load documents all the time.

Nancy Freeman,
Salisbury, SA

Unlaunching Applications

I have discovered a way to stop an application from starting once you have double clicked on the icon. Most of us who use the Mac would be well aware that it is very easy to double click on an icon by mistake or while trying to change the name of a file.

In frustration I discovered that if you quickly use the Command key in combination with a full stop (the same command you would use to escape from printing a file), control will be returned to the desktop. This of course will only work if you act quickly after double clicking.

You will notice that with the new System 3.2 and Finder 5.3 there is a definite pause before the application begins to load, and this gives you time to interrupt the application before it executes. Those who use a hard disk will probably find that they have more time in which to use this technique, as the System and Finder need to perform more housekeeping tasks before loading an application.

So next time you accidentally double click on an application or file, don't curse and cuss, just quickly use the Command/full stop keys and save some of your valuable time.

Arty Ricchetti
East Brunswick, Vic.

(The same process can be used to stop the copying of a large number of files; use this sequence and the Mac will stop copying after it finishes the file it is currently copying. Ed.)

Customising the Bomb

R Edit may be used to customise the appearance of the bomb system when a system error occurs, although this is hardly as rewarding as customising the start-up icon. The necessary steps are:

- ☐ open REdit;
- ☐ insert the disk containing the System you wish to customise (unlike ResEdit, REdit cannot alter the System under which it is running);
- ☐ using Open from the File menu, open the System in the usual manner;
- ☐ select and open the icon labelled "INIT";
- ☐ select the resource labelled "2";
- ☐ choose Patch Data from the Edit menu;
- ☐ click OK;
- ☐ scroll so that the lines labelled "00C0:" to "0130:" are visible (these lines represent the bomb icon);
- ☐ replace the hexadecimal coding on these lines with that of your bomb substitute (say, a gravestone). To do this, point to the first "0" following the "00C0:", click and type in the hex; — close up and confirm that you wish to save the change. Those who wish to try this but are unfamiliar with hexadecimal code may like to use the following:

00	FE	FE	00	00	82	82	00	00	7A	7A	00	00	0A	0A	00
00	0A	0A	00	07	FF	FF	EO	08	00	00	10	08	00	00	10
08	00	00	10	08	00	00	10	08	FF	00	10	08	00	00	10
08	00	00	10	08	00	00	10	08	00	00	10	08	FF	FF	10
09	00	00	90	09	00	00	90	09	08	10	90	09	07	EO	90
09	00	00	90	09	00	00	90	09	00	00	90	09	00	00	90
09	0C	30	90	09	0C	30	90	09	00	00	90	09	00	00	90
08	FF	FF	10	08	00	00	10	08	00	00	10	07	FF	FF	EO

The error message and button labels may also be customised by editing the characters in the block on the right hand side of the editing window.

*Ross Richardson,
Sandy Bay, Tas.*

Protection from accidents

It is pretty stupid not to save your work in progress regularly. Even though the Mac is pretty forgiving, it is still easy to wipe out some of your work by mistyping a command. Worse still, power fluctuations will cause an automatic reset, as will accidentally hitting the reset switch.

No matter what you do to protect yourself from such accidents, when you have to leave your Mac unattended in a busy office right in the middle of a long job or complex application, and you simply cannot leave your work and close down for one reason or another, your fate depends on others not touching the keyboard.

One way to lock the keyboard from accidental or deliberate use is to call up a desk accessory. This will protect your application to the extent that the desk accessory must be cancelled before touching the keyboard will affect your application or file. Of course, no technique is foolproof, for fools are so ingenious.

*Allan Banwell,
Bankstown, NSW*

Switching Tracks

If you use the Switcher regularly with the Finder loaded you may be interested to know that the documents you are switching between are "saved" in the bottom righthand corner of the Finder window.

These documents cannot be opened as documents while in the Finder but appear in the window when you arrive back in the application in which they are being used. The documents being used within the applications must be saved individually before attempting to eject the disk.

*Andrew Lovegrove
Perth, WA*

Cunning Copying

Sometimes the most obvious solutions are the hardest to see! I bought Copy II Mac version 4.2 because I wanted to instal Jazz on to a hard disk. Although it worked well — Copy II Mac I mean, not Jazz — it fell over when copying some of the least protected programs like Microsoft Word. It seems that it is not able to handle the simple copy protection schemes that earlier versions handled without trouble.

But the trouble with the earlier versions was that they would not copy programs such as Jazz or Excel on to a hard disk. When I tried version 4.2 on Excel, it would not copy the program correctly on to a hard disk, but it would copy it to another floppy disk without any trouble. So I used my copied copy of Excel and installed it on the hard disk instead, leaving me with a usable floppy disk copy and a hard disk version.

Since I cannot un-instal Excel from the hard disk, if I want to move it all I need to do is make another floppy copy for installation instead.

*Peter Limbourne,
South Melbourne, Vic*

Faulty Fonts

If you find that you are getting some nasty effects using the new LaserWriter driver version 3.0, such as jagged fonts, help is at hand. The version 3.0 driver plays up with most major applications, including Microsoft Word and Excel.

The problem is that there is a new format for laser fonts called Font Families, in which the one font comes in all sizes simply by being built from a description instead of a bitmap.

The solution is to use Font/DA Mover version 3.1 to strip all the old fonts out of your system before installing the latest version of the laser fonts. But only use version 3.1 of the Mover, since earlier versions cannot handle the new fonts.

If you do not want to move to the new laser fonts, just keep on using LaserWriter drivers version 1.1 (although you can use System 3.2 without any fuss).
*Joyce Cunningham,
South Melbourne, Vic*

Keyboard Kompatibility

To my mind, the biggest advance for the MacPlus is the enlarged keyboard. Serious MacHackers already have massive memory upgrades and use hard disk drives of some type (and the new drives such as the DataFrame 20 can be used just by getting a SCSI port attached, and not the whole over-priced logic board upgrade), but a numeric keypad and cursor control keys are sometimes a blessing for some jobs.

The MacPlus keyboard will work on any other Mac. Even the cursor keys work with most applications, although sometimes they all do not work all the time. In Jazz, for example, only three of the cursor keys work properly, with the right-cursor being the odd man out. New Roms will even fix that incompatibility. The old keyboard is not wasted, either, since it

replaces the larger keyboard when you are using the MacPac.
*George Popper,
Condell Park, NSW*

Tricky Toner

The LaserWriter's toner cartridge is supposed to last for 3000 prints, but this varies with use — the more text and graphics on a page, the more toner is required and the faster the cartridge is emptied. Conversely, if many of your pages have only a little text, the cartridge may last much longer than 3000 prints.

To check how much toner is left, you can simply remove the cartridge and shake it around v-e-r-y carefully. Or you can wait until it is definitely empty, then use it as a benchmark for weighing (with your indispensable postal scales) cartridges in use: any cartridge which is heavier still has toner left.

A further point with toner cartridges: if your brand new cartridge is not working, try removing it and shaking it very gently from side to side a few times before re-inserting it.

*Peter Nolan,
Townsville, Qld*

Flaky Floppies

I have often had my Mac suddenly refuse to recognise its own disks. I first put this down to the disks aging enough to become unreliable. After all, there is still no real standard for 3.5in disks, although 800K-bytes seems to be average requirement. But the disk faults were invariably related to the files put down on the disks, and therefore on the outermost tracks. The "lead in" track especially seemed prone to problems.

The solution I found was to use Copy II Mac, using the

sector copy option, to copy the failed disk (as the source disk) to a newly initialised one. So far I have managed to rescue just about everything, although once the Finder was so badly scrambled that nothing could save it.

One trick I have learned is to put a dummy file of anything, about 25K-bytes worth, on to a new disk first, so this file occupies the outermost tracks, the area most likely to fail.

*Jan Chambers,
Castle Hill, NSW*

Catastrophic Crashes

Apple's release of Finder 5.x and System 3.x has heralded a new era of buggy Mac software. While I know that it takes a lot of time to find most of the bugs, it seems that Apple is busy producing patches for patches. I would not mind too much except that my expensive Apple Hard Disk 20 kept on crashing, and only because of faults in the Apple system software. What was worse, after crashing it would not boot, which left me holding a leaking bag!

I partly solved the problem by holding down the mouse button while booting, which forces the Mac to boot from the floppy. Then I simply copy the floppy's System and/or Finder to the Hard Disk 20, overwriting its System and Finder, and everything is fine, until the next crash.

I have gone back to Finder 5.0, which while a little slower, at least keeps on working. Although I have a copy of Finder 5.3, I am a little apprehensive about using it after my bad experience with 5.1, and will wait until I hear reports about its stability.

*Alex Sumner,
Essendon, Vic*

Augmenting Applications

You are not restricted to installing fonts into the System files, you can install them into applications as well. This way you can have a reduced System for all disks, with application-specific fonts only in those applications such as MacWrite, MacPaint or Word.

In short, you can have your fonts only where you want them. To instal fonts into an application, hold down the Option key when clicking the Open button in Font/DA Mover. This will open the application files as well as the System files. *Sam Whiteoak, Fairfield, NSW*

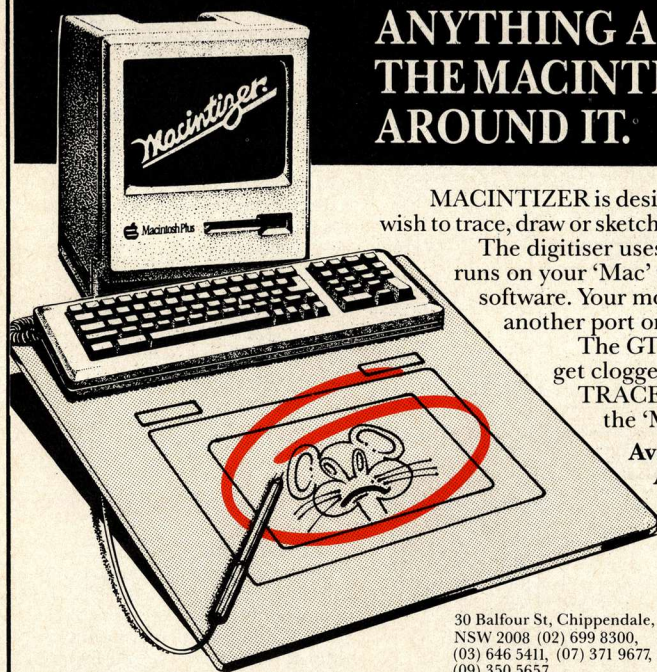
MacPainting Text

When creating text to go with MacPaint drawings there is often a problem in re-aligning the cursor if a mistake is made and the next word is begun. The problem arises because text entry does not function the same way as in a word processing program.

The misaligned text can be edited by applying the lasso around the words to be moved. This means that the cursor will become the arrow like the one which is used in the Finder, and can be moved over the lassoed area, clicked and moved to the correct area. The text can be rotated or made to look like a mirror-image using the Flip, Horizontal or Rotate commands from the Goodies menu in MacPaint.

*Andrew Lovegrove
Perth, WA*

Perhaps you have come up with a nifty routine, gained some insight into how the Mac or an application program works, or even written a short program that performs a useful function or creates an interesting diversion. Tell us about it, and we will pass your discovery along. We will also pay up to \$25 for each Open Window published. Please send your Macintosh discoveries on a disk (which we will return) to Open Window, Australian Macworld, Computerworld Pty Ltd, PO Box 929, Crows Nest 2065. All submissions become the property of Australian Macworld. ☐



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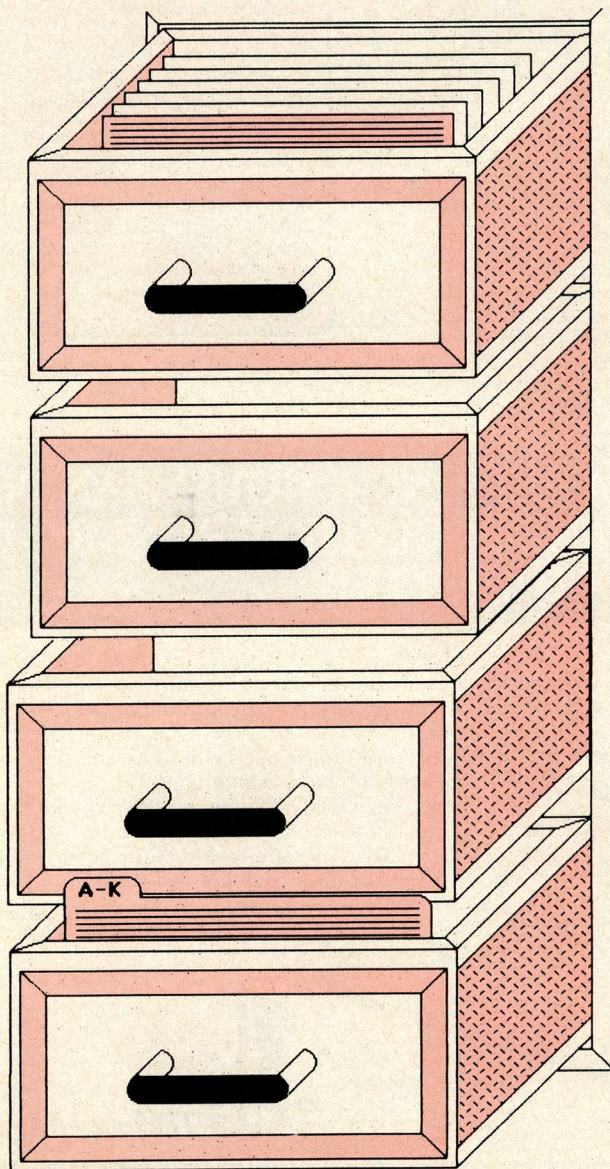
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Educational

Plato Edulink

a dial-up educational facility, is now available for the private user. A range of unpressured learning possibilities (1000 lessons) is offered, from pre-primary to tertiary, plus business, games and electronic mail facilities. Initially available only in WA, other

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Cstructures from Crystal Graphics is a powerful analysis and design tool for professionals involved in structural design. Large or small structures can be analysed and modified rapidly using the mouse. All conventional analysis capabilities are supported plus a user-definable calculation sheet for preparing your own design calcs.

Crystal Graphics, PO Box 68, Cottesloe, WA 6011. Tel: (09) 383 2157.

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Offers full MacPaint compatibility but provides far more features including the ability to edit in FatBits at 300 dpi; full screen graphics editing; multiple windows with stacking; four special effects, rotate, skew, distort and perspective and laser printer compatibility.

Info Magic, PO Box 131, Eastwood, NSW 2122. Tel: (02) 858 4111

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IMA Computer Company, 292 Canterbury Road, Surrey Hills, Vic 3127. Tel: (03) 830 4555.

Hardware

PC Mackey

is a professional keyboard for the Macintosh. It is a full size ergonomically designed keyboard intended for power users of any package. The built in numeric and cursor keys enable high speed data entry without the need to move the hands from the keyboard to the mouse. The function keys can be used and configured by the operator for up to 80 separate operations.

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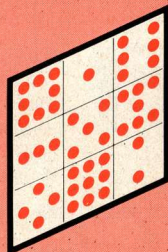
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New accounting package from Sybiz

Sybiz Software has announced a new accounting package called the Bookworker system.

According to the company, Bookworker is designed for use by those involved in small business who have no knowledge of computerised accounting, such as store owners and tradespeople who are self-employed.

The package functions as a book, allowing users to "thumb through" pages of ledger, customer, supplier and store books, as if they were working with a manual book-keeping system.

For further information: Sybiz Software
(08) 232 0600.



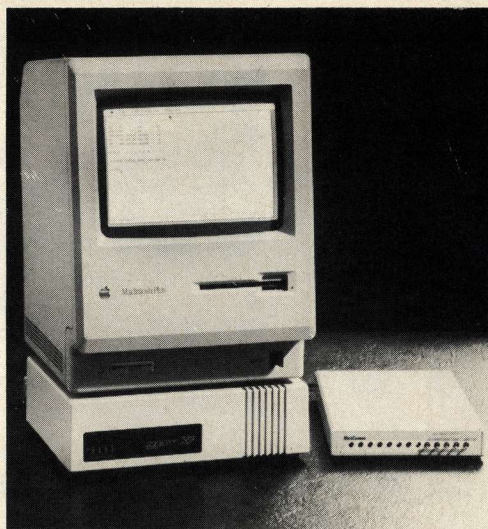
The new Macintosh streaming tape drive being demonstrated to Apple Computer Australia managing director, David Strong (right) by Illawarra Technology Centre managing director, John Anderson.

Low cost tape drive

University-based developer, Wollongong Computing Sciences has announced what it claims to be the "first cost efficient" tape storage device for MacPlus users.

The system will be priced at about \$3200 and has a maximum capacity of 60M-bytes (although this is expected to double within 12 months).

The tape drive is the first significant hardware product to emerge from the Apple University Consortium which supplies and supports Apple Macintosh equipment in nine Australian campuses, including the University of Wollongong.



Networking IBM and Mac

NetComm has announced products designed to link the Mac to major IBM systems. Using these products, clusters of up to 31 Macs on an AppleTalk network can be linked to IBMs using 3270 BSC and SNA/SDLC protocols.

An RS232 interface allows for connection of the NetWay 1000 hardware system to a Mac providing direct communication capabilities with a 3705 or 3275 processor or remote connection through a modem at speeds of 2400, 4800 or 9600 baud.

The IBM host assumes the NetWay system is a 3274 controller, which, according to NetComm, avoids the need for software modifications at host level. The company said that multiple host connection can be achieved by installing more NetWay 1000 A gateways.

Software supplied with the system allows any Mac on the network to act as four separate IBM terminals and can run four applications concurrently or be connected to four different IBM hosts.

For further information: NetComm Australia
(02) 888 5533.

New Macintosh available

The Macintosh 512K/800 is now available from Apple dealers at a recommended retail price of \$3695. The new model incorporates many of the features of the MacPlus including the new ROMs, a built-in 800K-byte disk drive, and the new keyboard which includes cursor control keys and a numeric keypad.

512K-byte owners wishing to upgrade should contact their Apple dealers.

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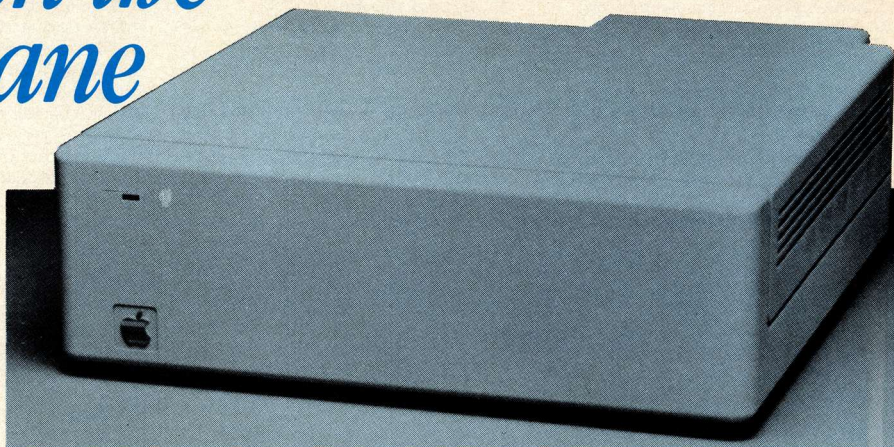


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Life in the fast lane



The Hard Disk 20 is reminiscent of the Jaguar car advertisements which used the theme "Grace, space and pace". This might equally apply to the HD20, according to John Kitchen, a business user of Apple's hard disk.

It is fair to say that the Hard Disk 20 will revolutionise your usage of Macintosh. The most important factor in this revolution is the massive increase of available disk space. This can be very quickly exploited to make working with the Macintosh far easier and more productive.

In particular, it allows residency of a multitude of applications; means (almost) never having to change systems; allows the use of many fonts in all sizes; enables full exploitation of desk accessories; provides space for a huge scrapbook and provides rapid access to many files and documents. It brings the desktop concept to full realisation.

The virtual elimination of disk insertion and swapping makes quite a difference to the rhythm of Macintosh operation. No more digging around in the bottom drawer

for that application which you rarely use, but for which you have an immediate requirement, because the application can be immediately available for the asking.

The need to switch from one system to another can also be eliminated since there need be only one system — the one on the hard disk. Although it is apparently possible to have multiple system files on the HD20, Apple has inserted an addendum sheet into the HD20 manual which states: "Disregard any references to multiple system files on

the Hard Disk 20 in your owner's manual. Apple does not recommend that you have multiple system files on the Hard Disk 20."

The reasons are not explained, but it could become rather difficult to know which system file was in control at any given time. Only having to deal with one system means that you always know what fonts are available and what set of desk accessories will sit under the Apple menu.

Without a hard disk, you probably tailor the fonts and desk accessories to suit the specific application and minimise the disk space occupied. When moving from one disk to another, how often have you longed for a font or DA on another disk? Or how often have you looked in the Notepad or Scrapbook, expecting to find something important, only to remember that the scrap or note is on another system?

Also, what did you do when Finder 4.1 and its new System and Imagewriter files came along in the system update? Did you go through your entire disk library updating every system disk to the new version (retaining all those important fonts and desk accessories)? Your dedication is admirable, but it cost you a lot of time.

If you have not, then you are not keeping current with new functions

and you may be living with some software that is unreliable. With the HD20, these problems are almost avoided, since there is only one system to update (and only one set of software problems to deal with at a time).

Increasing the number of fonts

Most Macintosh users actually use very few of the wide range of

the system file so that it will fit on the "small" diskette. Then the process has to be reversed in order to re-install the fonts.

The second problem with having a large number of fonts relates to the physical length of the font pull-down menu. The last fonts fall off the bottom of the screen! All is not lost though, because the Macintosh menu manager has been modified to allow the entire menu to scroll when the

The result is quite horrible. There is a bypass to this problem, however, albeit rather untidy.

Another commonly used program which does not fully handle large numbers of fonts is, incredibly, MacWrite. With a large number of fonts installed, MacWrite is not always capable of indicating which font sizes exist in the system (by outlining the font size). Apple advises that MacWrite will handle only up to 16 fonts. More than 16 fonts are usable, but it is necessary to remember which are the real sizes.

Most other programs seem to behave normally, particularly those programs which use dialogue boxes for font and size selection, such as Microsoft's Excel.

Desk accessories galore

Desk accessories in large numbers can consume a significant quantity of disk space and some also require data files, for which room has also to be found. However, once you are freed from the tyranny of disk space limitations, the ceiling becomes system-imposed — no more than 15 desk accessories can be installed anyway, so you may find it difficult to select the 15 you will actually use.

In summary, the extra storage space afforded by owning a HD20 means greater convenience and productivity. The HD20 makes the desktop concept viable, allowing a constant working environment with a large and consistent set of tools readily available.

The Convenience of Pace

The HD20 is considerably faster than the floppy disk drives. This is not so much because of a slow data transfer rate from floppy, but because the HD20 is much faster to move from track to track, and it spins at a far higher speed. In order to determine what differences actually exist, a simple program written in Microsoft Basic was created to read and write a large sequential file. Experimentation with different buffer sizes showed that with large buffers, the HD20 was only 10 per cent faster. With small buffers, it was more than 60 per cent faster.

These understate the true speed

“The HD20 makes the desktop concept viable, allowing a constant working environment with a large and consistent set of tools readily available.”

available fonts for most of their work, but have the occasional need for one or more of the unusual ones. A 400K-byte diskette can very quickly fill with fonts, leaving no room for applications or documents. This limitation is removed entirely with the hard disk. Furthermore, 20M-bytes allows the installation of fonts in every available size.

The Imagewriter printer driver, when printing "high quality" (or, as it is now called, "best quality"), looks for a font definition which is twice the size of the required one and then scales this down. The result is a much smoother character, without jagged edges.

For reasons of quality it is therefore important to have as many sizes available as possible, especially the space-consumption large one. A system with 24 fonts, some of which appear in 8 or even up to 11 different sizes, becomes practical — but it results in a system file which occupies more than 700K-bytes of disk space!

This is where the first problem arises. It is just not possible to back up a 700K-byte file on to a 400K-byte diskette! Backing up the System file is therefore an awkward operation, involving the use of the Font/DA mover to create font backup files and to remove the fonts from

bottom is reached. In general, this solves the problem.

Of course, not all programs have been written in a manner which handles the extended menu gracefully. The worst has to be MacDraw, which allows only 11 fonts to appear in the accessible part of the menu. Any excess appears below that section of the menu which contains font size. Selection from this second group has no effect on the selected font.

The problem is compounded by the fact that MacDraw does not adhere to Apple's programming standards, in that font identification is by position in the Font menu. Programs which adhere to Apple's standards use an assigned font number to identify the font associated with a piece of text.

This unfortunate MacDraw feature means that the fonts used in existing MacDraw documents miraculously change if you instal new fonts, remove fonts or cause a re-ordering of the fonts in the menu. With the Macintosh Plus, the system sorts the font names into alphabetical sequence automatically, thus almost guaranteeing a change of fonts in every existing MacDraw document.

differential, because most Macintosh disk accessing is not sequential in nature and has a high frequency of track-to-track movements. This is especially true when opening applications, because of the need to pull in the various resources required.

The disk speed is relatively unimportant for loading documents into memory by those programs which use a lot of microprocessor time during the load. However, the HD20 makes a dramatic difference with program functions which require only one or two disk accesses.

For example, when choosing Open in Jazz, there is an annoyingly perceptible delay before the dialogue box appears when Jazz is on diskette. There is almost no delay when Jazz is installed on the HD20. However, while disk speed as such is obviously improved, the greatest time savings are because of the

almost total avoidance of disk swapping.

The Convenience of Grace

An integral part of the HD20 is the new hierarchical file system (HFS), which is also used for 800K-byte disks. HFS allows the management of large numbers of files with grace. HFS takes the folder concept we have been used to in the Finder and extends it to the application.

Now the Open and Save As . . . dialogue boxes allow choice of folder as well as choice of file name. What is even more impressive is that applications which were created long prior to HFS generally make perfect use of the new function and present the new dialogue box because they adhere to the "inside Macintosh" standards. Applications do not build their own

Open dialogue box, but call up a toolbox routine to do it for them. As a result, with a change of system, all the dialogue boxes are automatically updated.

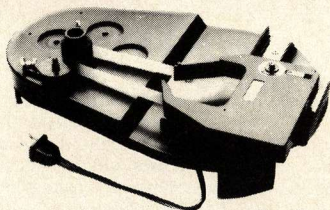
Physical Considerations

The HD20 is normally placed underneath the Macintosh, raising its position in the world by about 8cms. A competitive hard disk advertisement suggests that this destroys some of the ergonomics of the Macintosh. The converse would appear to be true. After seeing a Mac sitting on an HD20, other users have been inspired to place their Macintoshes on top of a telephone directory, to emulate the new position! It is also possible to place the HD20 beside the Mac, if this position is preferred.

Limitations

As with any new product, there are bound to be certain aspects

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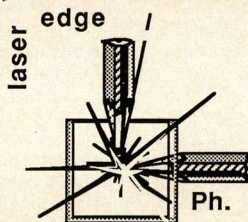
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which are not as good as you might like, and it is only fair to provide a complete picture of the product. However, it must be emphasised that none of the items below are show-stoppers.

It has already been indicated that some things are not improved by extra disk speed — loading of documents being an example, but most other applications do achieve significant benefits from the improved access speed.

Slow Finder

The time taken to return to the Finder is always intrusive when

you use as a source of information. The space used is different in the Finder and Get Info windows. The HD20 manual states that the capacity of the disk is 20,769,280 bytes. However, that appears to include some overheads, because it also states that there are 39,040 disk blocks, each of which can contain 512 bytes of data. This is a total of 19,988,480 bytes. Something is consuming nearly a megabyte of invisible space.

The invisible Desktop file is not the culprit. It has an allocated size of 64K-bytes which is not completely used. Presumably the rest is taken

before you have put too much data on the HD20. Then, if you do lose everything the loss is not great. More practically, use these programs on diskettes only and then use the standard Font/DA mover to instal the results. Always make sure you are in a position to reconstruct the system should it be destroyed by experimentation.

In addition to applications directly misbehaving with the new system, you may experience a number of unexplained system crashes. On occasion, the mere insertion of a perfectly ordinary diskette can provoke the "bomb". It would appear that software failures have become more frequent with the HD20 and the System files associated with Finder versions 5.0, 5.1 and 5.2. The frequency of problem seems to have been reduced with Finder 5.3 and System 3.2, but a number of applications still create problems. This is probably a result of developers not adhering totally to the standards of "Inside Macintosh", a task of non-trivial magnitude.

Incidentally, if you do experience a "bomb", you can expect the restart of the HD20 to take a lot longer than usual. It appears that any lack of orderly shutdown causes diagnostic and cleanup processes to be run during startup. These processes cause a lot of frenetic disk activity, so you just have to be patient. All will be well in the end!

Memory Consumption

On a 512K-byte Macintosh without the new ROMs, the disk management software uses additional RAM storage. This can create some difficulties where RAM is at critical levels. An example of where this becomes a real problem is when running Excel with another application, typically MacWrite, under Switcher.

Under the level of system software which came with Finder 4.1, the available memory immediately after opening Switcher release 4.4 is 401K-bytes. This drops by 32K-bytes to 369K-bytes when using the HD20 with Finder 5.2 and System 3.1, the extra 32K-bytes being occupied by the Hard Disk 20 code. In practice, it means that there is about 360K-bytes to play with.

“You will have to impose a folder structure which is conveniently sized for backup purposes.”

using floppy disks. This problem does not go away when using the HD20. The improvement in disk speed is roughly offset by the increased amount of information the Finder has to deal with. Returning to the Finder is still a protracted process on a reasonably full HD20. With the equivalent of more than 30 diskettes of data on a hard disk, you cannot expect the Finder to operate too fast. For this reason, the use of the MiniFinder is highly recommended.

Macworld has published an excellent article on using multiple MiniFinders to cope with large numbers of applications and documents. The scheme works very well with transitions between MiniFinders taking about a second. You can avoid Finder delays by only returning to the Finder to delete files, re-organise the folder structure or contents, or when backing data up to diskette.

HD19

If you add up the total disk space in use and the available space, the sum comes out to a shade over 19 million bytes, depending upon what

up with indexes or directories or something. Since this is less than 5 per cent of the total disk space, it is not really important.

Incompatibilities

Of far greater significance is the impact that the system changes have had on existing applications and their compatibility with their new environment. These impacts range from almost cosmetic to catastrophic.

At the minor end of the scale. Excel no longer displays a useful assessment of the size of the file which is about to be deleted. At the other end, quite a number of programs conjure up the dreaded "bomb", destroy the system file or both. This applies to many of the public domain or freeware programs, particularly those applications or desk accessories which delete, lock, unlock or rename files, or change the creator id or type, should be treated with care.

Two possible approaches are suggested with such programs. Firstly, do some experimenting

Excel really needs more than 256K-bytes, but will tolerate this level of memory. If you take 256K-bytes from 360K-bytes, there is only 104K-bytes left, so you can see that the loss of that critical 32K-bytes really makes the difference between being able to add a 128K-byte application and not having room for it.

If you are using large applications such as Excel or Jazz and are having difficulty fitting your work into memory, you may find that it will no longer fit in a 512K-byte Macintosh after adding the HD20. Adding the ROM upgrade should relieve this situation.

Backing Up Your Data

This limitation on data backup has been kept until last, because it is probably the most time-consuming task of all. HD20 provides no facility for data backup apart from the standard approach of dragging files and folders off to a diskette icon. This means that you will have to impose a folder structure which is conveniently sized for backup purposes. Try grouping small folders into one larger one to make up a reasonable quantity for a diskette. In some cases, a folder which is created for logical reasons of access become too large to fit on a diskette.

Then you should split the folder contents into two sub-folders and backup each separately. This is a slightly awkward process, because the only reliable way to find out the size of the folder is by using Get Info. The Finder information provided in the text (non-icon) views is not reliable. Furthermore, the "date of last modification" in Get Info window is not reliable if the folder contains other folders. You must inspect the date on every internal folder to be sure. When in doubt, back it up!

The MacPlus Upgrade and the Disk Cache

Since writing the above, a long-awaited upgrade to MacPlus has arrived. The wait was more than worthwhile. Disk speed is significantly further enhanced, by some extra tricks in the 128K-byte

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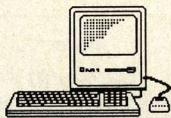
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ROM. When you add disk caching to this basic speed increase, the results are quite startling. Disk caching is a feature enabled through the new Control Panel desk accessory.

Caching is specified in the little box marked RAM Cache. With 512K-bytes dedicated to the cache, up to 512K-bytes of disk data will be held in RAM for more rapid future access. In a typical working session most of the applications and their files end up resident in RAM, causing an almost complete elimination of disk access.

Operating in a multiple application environment such as when editing, compiling, linking and testing a program, or a multiple document environment, when opening and closing the same group of documents repetitively, is made very easy and fast with the RAM Cache. The RAM Cache is so fast that you may elect to avoid the use of Switcher almost entirely and use the more traditional and simpler approach of Quitting from one application (to the MiniFinder) and starting the other.

When using applications which are low consumers of memory, it is best to set the RAM Cache to 768K-bytes. If you sometimes use big memory burners like Jazz and Excel, it is more convenient to set it to 512K-bytes for a big application or combination under Switcher, you can tailor the memory allocation to suit.

Summary

The Hard Disk 20 makes a significant improvement to the Macintosh environment, allowing a very full realisation of the Desktop concept. It, together with the hierarchical file system, smooths work flow and provides for a major improvement in productivity.

As such, it will pay for itself in a very short period of time for the serious business user. When combined with the Macintosh Plus, it becomes a superb productivity machine, probably unequalled by any other system in a near price range. However, it is crying out for an adequate backup system, and software developers need to give some attention to quality and compatibility of software.

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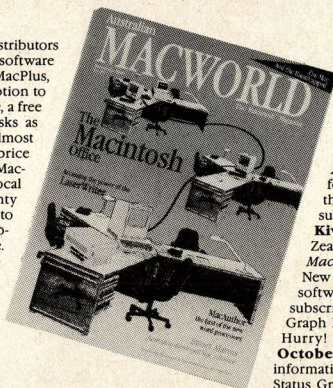
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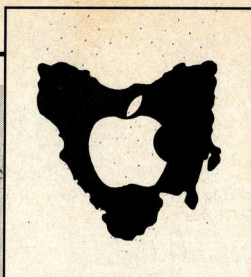
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community

A Macintosh first

Desktop publishing is all the rage, and not even the Holiday Isle has escaped its clutches. In a small township in southern Tasmania, a first time publisher produces a major publication with a full time staff of two people and two Macs.



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Few people would disagree that the birth of the Macintosh paved the way for a variety of small business opportunities while at the same time opening up the world of computing to people with very little computer knowledge. As an inexpensive, easy to use and high-powered personal computer the Apple Macintosh is without doubt unequalled.

By far one of the fastest expanding growth areas opened up by the advent of the Macintosh has been the area of desktop, or personal publishing. While its ability to produce newsletters and pages of text and graphics is well known by many people, the extent to which this can be carried out is only now becoming fully apparent.

However, for a former NSW school teacher the advanced technology of the Macintosh and LaserWriter has been combined with an idea and a perceived opportunity to "create a happy blend" and the launch of a career as a newspaper publisher from a renovated cottage on the rugged south coast of Tasmania.

After 11 years as a school teacher, and a further six as the head of a NSW Christian school, Max Harris decided he had reached the stage in life where a career change was needed. Not having anything in mind immediately, he moved to the small southern Tasmanian township of Sorell in the hopes of relaxing from the 17 years of hectic life as the educator of young minds.

However his rest had hardly begun to take effect when Harris perceived the need for a weekly advertising newspaper in Tasmania, similar in concept to the *Trading Post* of Australian mainland capitals. Harris said he had no prior knowledge of computers or publishing before embarking on his venture, which has seen *The Hobart Weekly Trader* reach a circulation of more than 5000 a week and carry more than 600 advertisements a issue.

While the circulation figures might be nothing when compared to those of the *Murdochs*, *Packers* and *Fairfaxes* of the world, it is no mean achievement when it is considered that the publication circulates only in southern Tasmania and is put out by a fulltime staff of two. The secrets of Harris's success, according to him, are his Apple Macs, Microsoft File, PageMaker and the LaserWriter with which he performs all of the work required in getting the paper ready for publishing.

Harris said, "I had previously seen the Macintosh that a friend of mine in Sydney owned and was aware of some of the capabilities of the machine. When I decided to start the

himself needing another Mac just to keep pace with the work load.

"Very soon after we started, the MacPlus was released and I bought one of those along with an HD20. The 512K-byte machine was good initially but because of the method we use it needed a lot of disk swapping and that very quickly got quite tedious," he said.

Harris now uses the 512K-byte Mac as a backup machine and the MacPlus and HD20 as his primary machine in the production of Tasmania's largest circulating classified listing. Both of the Macs and the HD20 are linked through MacServe. According to Harris he is going to have to expand even

“The secrets of Harris's success, according to him, are his Apple Macs, Microsoft File, PageMaker and the LaserWriter.”

paper I briefly looked around at what else was available and very quickly came to the conclusion that the only machine that would do what I needed it to do was the Mac, so I went out and bought one."

The purchase of Harris's first Macintosh was just prior to Christmas last year. Six weeks after that he felt he knew enough about the capabilities of the machine to start the business he planned. "The one thing that struck me all the while the paper was formulating in my mind was the incredible power and ease of use offered in the Macintosh compared to conventional computers," he said.

After becoming familiar with Microsoft File and PageMaker "in about a week for each" Harris produced the first copy of *The Weekly Trader* in early February of this year. Such was the response to the paper that Harris soon found

further, at the rate business is increasing.

While the rapid growth of the paper has bought a smile to his face, it caused an opposite effect on the faces of management at the *Hobart Mercury*, owned by the Herald and Weekly Times group. According to Harris the birth of *The Weekly Trader* saw drastic changes in the style of the mass circulating *Mercury's* advertising section, and even a change of names to one sounding similar to his own registered name.

"When we started we generated a lot of publicity, as it was the first time a new paper had started in Tasmania, so people were pretty excited about the whole thing. As

ads at newsgroups or mail direct.

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not think we could exist if we were not competitive," he said.

He also said that he was intending to use the Macintosh and LaserWriter combination to perform outside work for small and medium sized companies requiring inexpensive typesetting of brochures, newsletters, flyers and other desktop publishing work. With five months of publishing behind him, Harris claims he is thoroughly loving his change of career and his new role of Tasmania advertising paper media baron.

"The only problems I have really had so far were with issue number four. I was using the old version of the Finder (3.1) with PageMaker 1.1 and at two o'clock in the morning it started converting everything to 120 point. To this day, I still do not know why it happened as one minute it was fine and the next it was not, but it only happened once so I cannot really complain," he said.

The Hobart Weekly Trader might be a far cry from *The Sydney Morning Herald* or the *Financial Review* and *National Times*, but it is definitely filling a niche in the southern corner of Tasmania. According to Max Harris: "The opportunity was there, and the whole thing has been a happy blend of opportunity and technology". *Australian Macworld* also feels that without the vision of Harris as well, the opportunity and technology would still be sitting there waiting for something to be done about it.

As has been the case numerous times in the past, the Macintosh has provided the catalyst for a man with a vision to become self-supporting and enterprising without the need to know anything about computerisation or operating systems. If more people would remove their blinkers and take a look around them, the world of computers would not be such a confusing place.

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GALLERY

Edited by Lisa Romano

In this issue of *Australian Macworld*, we are inviting you to enter our Macworld Gallery competition. First prize will receive \$250 cash from Computerworld Pty Ltd, publisher of *Macworld* plus valuable products from Apple Computer Australia Pty Ltd. Second prize will receive \$150 cash plus Apple products.

The Macintosh is great to use with MacPaint. In fact, features such as the Undo command, the Revert commands, and the ability to copy and experiment with portions of a drawing make MacPaint a more versatile (or at least more forgiving)

tool than most traditional drawing or painting media.

The judging panel will comprise Robert Wells, Publisher of *Macworld*; Chess Wade, Editor of *Macworld*; Inge Fugelstved of Apple Computer Pty Ltd; and Lisa Romano, *Macworld* graphics designer.

Here's how to enter:

□ Draw an original picture (not a copy of a photograph or of a pen-and-ink drawing but an original work of art) on the Mac and send a paper copy to:

Editor, *Australian Macworld*,
Computerworld Pty Ltd,
PO Box 929,
Crows Nest, NSW 2065.

□ Also include with your picture a detailed description of how you created it on Macintosh.

□ If your drawing is selected as a finalist we will ask for a copy of it on disk. All disks become the property of *Macworld*.

□ Up to three entries a person will be accepted.

□ Closing date has been extended.

We will publish selected drawings in the *Macworld* Gallery in future issues of *Macworld*. These will be chosen to provide a broad representation of Mac art.

Any enquiries should be directed to the Editor.



Suburban Cats

Suburban Cats

- Moon created using open circle.
- Top of fence created using pencil and shift key.
- Indentations in top of fence created using Fat Bits and pencil.
- Everything outside the moon blacked out using brushes.
- Cats created using Brush Mirrors (vertical) and freehand painting.
- Lines and lighting effects created using the pencil and shift keys.
- Lettering created using Geneva font, tracing edges from EDIT, using pencil and Fat Bits to remove unwanted white areas and modify some letters.

Phil Marks

Mosman, NSW

Ninja

This picture of the Ninja took less time than I expected. I originally drew the closest figure facing the front but in the end I found the effect was greater from the back. The house and forest were very easy as was the table and platform. The two samurai warriors and the small ninja were done mostly in Fat Bits. The hardest part of the picture was the throwing star in the bamboo.

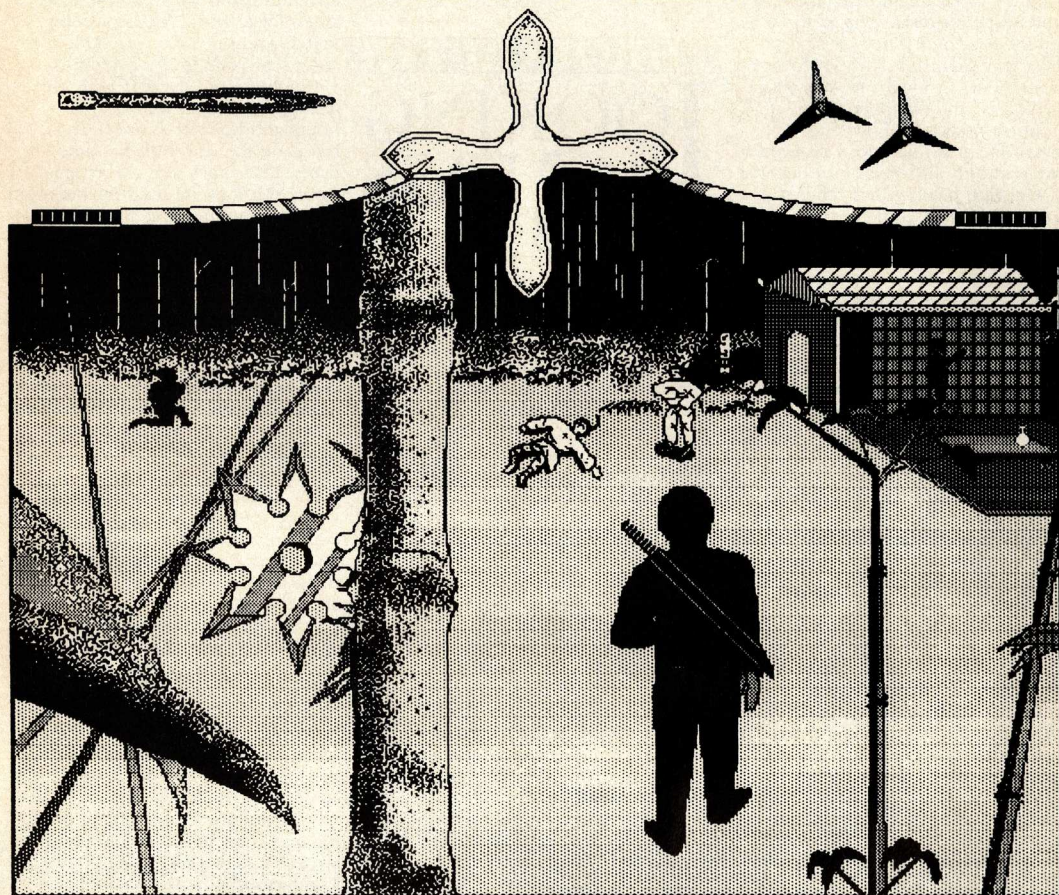
I spent some time in the State Library researching the weapons at the top of the page.

Christopher Large

(Age 14)

Hobart, Tas.

NINJA



**A NINJA MUST MOVE WITH
STEALTH AND CAST NO SHADOW .**

The first day our new Macintosh (512K-byte one disk drive plus printer) came home, we all wanted to play with it. My two sons, (14 and 12 years old) wanted to MacPaint everything, I wanted to MacFont everything, and my husband wanted to speak to it in its native tongue.

This, he thought, was BASIC. All computers speak BASIC, don't they? And try as he might, the MacWrite and MacPaint disks refused to understand him. They insisted on everyday English, via the menus. For a moment, I thought he was about to "trash" the computer.

But, this was an hour after our new Macintosh had been plugged in. We had only just been introduced.

Duncan, having used other computers, had certain expectations. I, having recently graduated from a manual Imperial 66 typewriter (estimated circa 1958) had none.

I had bought the Macintosh for that very reason. I knew nothing about computers, and the Macintosh was the only one which would speak to me in plain English. I did not have the foreknowledge to ask the salesman whether it spoke BASIC.

You see, I am a writer. Most writers cannot afford a computer. They have to be subsidised, either by the government, or by their spouses and children. And my spouse, Duncan, earned a regular income, and he had put up half the cost, while I had paid the other half.

To me, the computer was a word processor. To the boys, it was an extra special Christmas present. We told them this, many times, so they would not notice that there were no other Christmas presents. But they were delighted. In the Christmas package were two games — Airborne and Hitchhiker's Guide to the Galaxy.

Airborne was a great killing game. It had explosions, helicopters and — wonder of wonders — sound effects. Our Macintosh could do more than beep! The opening titles were accompanied by a "Dambuster-ish" fanfare which stirred the boys to battle fever. With their trusty mouse, they defended their corner of the screen from marauding stick men who dropped from helicopters by



Robin Robertson

THROUGH THE LOOKING GLASS

parachute, and threw grenades with computerised accuracy.

The guns went "Bang!", the explosions went "Boom!" and the helicopter blades went "Ackerackeracker!" The sound of battle went on into the night, while the computer counted dead stick men and spent bullets. I also cloned a relentless supply of stick men; while the cavalry, which, in any good Western movie, always rescues you in the nick of time — never arrived. Finally, the boys were vanquished.

So was my mouse. It was kind of sticky. Battle sweat. Spilled blood even . . . more likely honey from the last snack.

Meanwhile, the other half owner of the computer wanted his money back. All computers, he grumbled, should speak BASIC.

But, now we had the question, we soon found the answer. We could buy a disk which spoke BASIC. Which we did, as a New Year present for the computer.

Duncan started writing programs with it . . . he wrote one which asked you when you were born, and it told you how many days you had lived. It came up with some

depressingly large numbers.

That is, when he could get near the computer. The boys, of course, demanded their hands-on time, I had to process words, and we all were eager to play Hitchhikers' Guide to the Galaxy.

One evening, we put Airborne firmly away and inserted the Hitchhikers' disk. This was our first experience with a computer adventure, and we soon found we had a lot to learn. We kept being killed. And once we were killed, we were sent back to the beginning.

If you are not familiar with the game (and Heaven knows after hours and hours, I am not), it is based on the novel of the same name. It assumes you are Arthur Dent. You look out of your bedroom window one morning and see a bulldozer about to demolish your house. You have to tell the computer what you will do next. The vertical blinking bar awaits your instructions.

But first you have to understand that this disk is not as smart as it seems. It can come back with some very witty replies, but it does not think your jokes are funny. The truth is it does not understand them. It only has a limited vocabulary which it can er compute.

For instance, early in the game, you are told there is something in your dressing gown pocket, and your natural reaction is to say: "Take thing from pocket". The computer answers: "You cannot see anything here". After much bickering back and forth, you finally discover that if you say: "Open pocket", it does.

Once you overcome the cultural differences, you can then figure out how to get your Arthur down the stairs, out the front door and on to the road, where you lie down in front of the bulldozer.

We remembered this much from the television series, and it was sweet of the author, Douglas Adams, to remember too.

After that, his memory lapsed. He deviated from the plot, and left us stranded. Every time we (us four Arthur Dents) sat up, the bulldozer swung around us, demolished the house and killed us with a flying brick. And my Macintosh had no sympathy for us, either. Just sent us back to the beginning, dressing gowns and all.

All this was done, not with graphics, but with text. It was rather like reading a "Choose your own Adventure" book, which lets you decide what you will do next. You also take the consequences, which is usually a violent death. Then you are whizzed back to the beginning, and you start your life over again. In other words, reincarnation for beginners.

Meanwhile, I still have to earn the price of a disk, so I had to write, for several hours a day with MacWrite. We got along fine.

I did, however, have a few complaints. First was the sunshine. The windows of my office face north-west, and at this time of year (winter), the sun is pretty low. It beams through the windows — and on to my screen — at about 10.30 am. I have to close the curtains.

Before I bought the Macintosh, I never had to close the curtains . . . when the sun shone across my Imperial 66, we both basked in it, and one of us went to sleep.

The sun swings off the computer screen around midday, and spotlights the rest of the room, which then reflects on the screen. I can read the book titles on the shelves behind me without turning my head.

As convenient as this is, I cannot read what is on the screen, so the curtains are closed for most of the day. In the sunniest weather, my office is gloomy, except for the moon glow of little Macintosh.

However, this glow does not shed quite enough light for me to read the fine print of my dictionary. I have to turn on the desk lamp, which is much brighter than my screen. Looking from the modest glow of the screen to the glare of the lamp-lit dictionary page has an odd effect on my eyes. Not blindness . . . wrinkles.

My other complaint is the perfection of the text. Whatever I write looks like prose. Anything that beautiful cannot possibly need a rewrite.

When I wrote on my Imperial 66, I knew, at a glance, it was not prose. It was littered with "x"ings out, overtypes and lines running off the edge of the page. I felt an urge to tidy it up, and as I did, I rewrote it.

Now, when I write on my Macintosh, there is no mess. But

prose it ain't. I have to scan my Mac-text very closely to find that it disguises paragraph after paragraph of drivel — well-groomed drivel. Sometimes tidiness is not next to Godliness.

My final complaint is — I cannot keep a secret any more. In the olden days, I used to type on paper. People never leaned over my shoulder and read the page as it emerged from the typewriter. It was not polite. It was rather like reading other people's mail.

Now, my words are on television, up there, on the screen for everyone to read. No matter what I am typing everyone feels free to stand behind me and read, point out my spelling errors or suggest a better word. And



they tell me never to start a sentence with "and".

These people never disappear into the electricity, as — one dreadful day — my words did. I was typing some product of my imagination, and suddenly, Mac hissed, and my words exploded into black splinters on the screen. It looked like white scrambled eggs. I thought Mac, who was usually so composed, was haemorrhaging.

I did what Hitchhiker's Guide said not to do — I panicked. I pressed the Programmer's Switch on Mac's side. The manual said I should not press this switch, and I have often wondered why it is there. But it seemed to have the same effect as turning Mac off. The screen went black. I waited. Was Mac dead?

Mac started breathing again. The disk started from the beginning. I asked it for the document I had been writing. I *had* saved the first paragraph or so, and the disk produced this. Then it look me straight in the eye, and swore there was nothing more.

What I had not saved had been swallowed by the electricity. Two hours of invention had snuffed it . . . so where was reincarnation when I really needed it?

I could have sworn I heard my Imperial 66 Manual typewriter snicker.

Somewhat shaken, I tried to remember what I had written. Piece by piece, I reassembled it. Some phrases limped back; some linking ideas returned but not with whatever they had linked.

After every line, I clicked Save. After every page, I printed it out. Then I copied it on to another disk . . . or two.

It has not happened since, so I am wondering if it was something I said to offend Mac. I have asked other Mac owners what they think happened, and they do not seem to know either. In fact, it surprised me to find them as vague as I am. Somehow, I had the impression that they would know so much more than me about the Macintosh. Perhaps it was the way they tapped the keys so confidently.

Now I realise it is all bluff. They have to appear more intelligent than the computer, don't they? But ask them why Mac threw a tantrum . . .

When it happened, I had just finished a row of >>>s (I do not dare do more than two, in case it happens again) to mark a change of subject. Someone suggested that the disk might have been nearly full, and full disks can be temperamental.

Personally, I wondered if, by using that symbol, I had addressed the Mac in its native language, and told it to make white scrambled eggs.

Then, there is the school of thought which opted for the surge of electricity which occasionally attacks computers through their cables. Or, as some bright spark suggested, perhaps it was static electricity, and was I wearing nylon underwear at the time? ■

NEXT ISSUE

Desktop publishing

Although the LaserWriter is the most compatible, it is not the only laser printer compatible with the Mac and PostScript. Chess Wade takes a look at the Dataproducts LZR 2665, the printer used to print *Publish!* ■

Hardware directory

The *Macworld* directories return, with hardware being the theme for the next issue. If you are looking to buy some hardware for communications; networking; laser printing and so on, you cannot afford to miss the October/November issue. ■

Spelling checkers

Using a LaserWriter to print your business letters is not going to be as effective as it should be if the documents are full of spelling errors. October/November features a round up of spelling checkers available in Australia. ■

And it was written

Get up to date on Macintosh word processing. In the next issue we will have comparisons of word processors including the MacPlus version of MacWrite, and updates on MS Word, MacAuthor, and general text editors. ■



dBase Mac

Ash-ton-Tate's late entry into the well populated Mac database market is likely to cause quite a stir. We take an indepth look. ■

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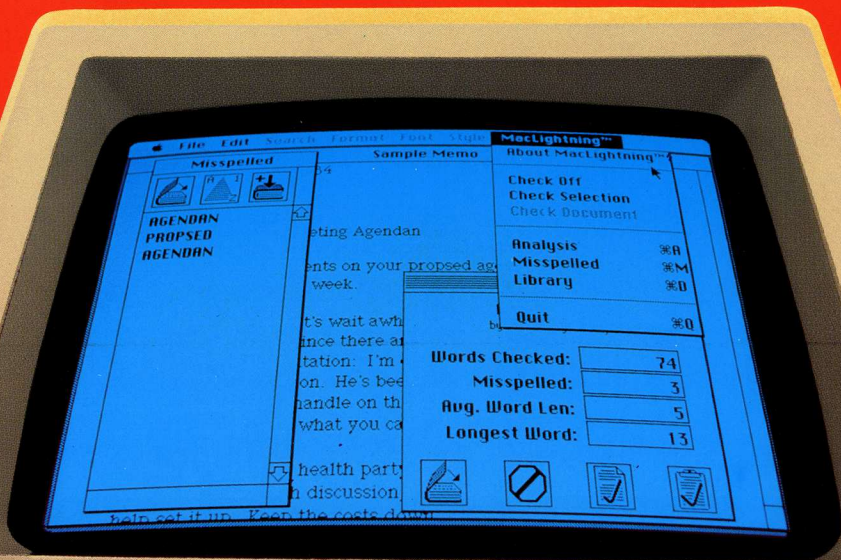
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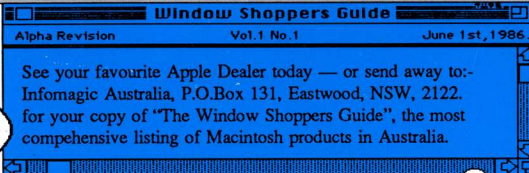
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